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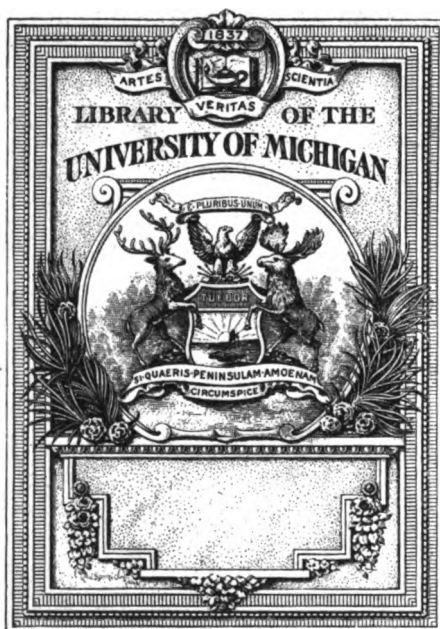
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No. 1.

INTESTINAL OBSTRUCTION IN THE DOG: ITS TREATMENT, AND THE OPERATIONS OF LAPAROTOMY, ENTEROTOMY, ENTERECTOMY, AND ENTERORRHAPHY.

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THE term "intestinal obstruction" includes all cases in which the onflow of the contents of the intestinal canal is obstructed. The less degrees of constipation do not, however, form part of the consideration.

Occlusion of the canal is sometimes congenital, most frequently in the region of the anus (*atresia ani*), where the integument remains imperforate or the rectum ends in a blind sac.

The classification of all other cases into three principal groups, adopted by the late George Ross, M.D., in an article on "Intestinal Obstruction in the Human Being,"¹ is equally applicable to the dog:

I. From compression, obliteration of the canal taking place from pressure without.

II. From obstruction, blocking of the canal by obstruction within its walls.

III. From constriction, obstruction by causes developing in connection with the wall itself.

1. Obstruction arising from compression without may be due to slits in the mesentery or omentum. These may follow care-

¹ Buck's Reference Handbook of the Medical Sciences.

less laparotomy operations, more particularly after ovariectomy, where perforation of the broad ligament has taken place. Abnormal fibres and false ligaments left as a result of former peritonitis and the various herniæ are possible causative agents of constriction. Volvulus has been recorded occasionally in the journals, and is possible from very severe vomiting, to which dogs are so prone. A remarkable case of torsion of the stomach came to light at Munich, which was fully described by Kitt, in his *Monatshefte für praktische Thierheilkunde*, 1894. Intussusception, or inversion of one part of the intestine into a part immediately adjoining, is not uncommon, and appears to depend on irregular muscular action of the walls. Congestion of the vessels and inflammation follow invagination of a portion of the bowel, resulting in intermucous and interserous adhesions. Gangrene may ensue and sloughing of the entire inverted section take place, so that it is ultimately discharged at the anus.

Other causative factors to be considered are swelling of the prostate gland, abdominal abscesses, and ascites.¹

2. Obstruction by foreign bodies. This is not at all uncommon in grown dogs from bones or fragments of bone which have failed to become digested during their sojourn in the stomach. It is questionable whether at any time bones constitute a proper food for dogs. Not only do they severely overtax the digestive apparatus, but they are liable to pass through into the intestine, to form there the nucleus of some fecal calculus. Subjects with gastritis will often swallow stones and other cold substances; while severe irritative eczemas, by causing an animal to tear and consume its hair, may lead to the formation of impacted hair-masses. Pet dogs given balls and similar articles to play with will swallow them accidentally or otherwise. The presence of plugs of matted ascarides are sufficient in themselves and often induce an abnormal appetite and craving for foreign substances, when buttons, peach-stones, cork-stoppers, marbles, nuts, tacks, or almost any foreign body, are liable to be picked up. Müller records the swallowing of a sponge. Such matters are probably swallowed before the self-education of the puppy in the matter of victuals is complete.

Obstruction by fecal masses (coprostasis) is a condition due

¹ Müller: Die Krankheiten des Hundes.

to paralysis of a section of the bowel. It is most common in the rectum, and is caused by undue solidity of the feces from the nature of the food, and (what is only too true of a large percentage of all canine diseases) want of exercise and overfeeding, with its resultant sluggish liver. Hemorrhoidal nodules are occasionally sufficient cause for the development of this trouble, depending in turn on the condition of the liver. Perineal hernia will also exert sufficient pressure on the rectum to produce occlusion.

The intestine at the proximal side of any obstruction manifests considerable dilatation and hypertrophy, the result of the abnormally active peristalsis by which the muscle has tried to force on the obstacle, a condition in striking contrast to the narrow, contracted, empty distal portion. The irritation produced by these masses may set up a subacute muco-enteritis. Ulceration of the wall is uncommon, the death of the animal from inanition, combined with collapse from copræmia, usually intervening before such a process can be established.

3. Obstruction from constriction. This includes all forms of neoplasms and cicatrices. A transverse wound occurring during crude abdominal operations when cicatrized, or even stricture following coalescence of the resected bowel after the operation of enterectomy, may completely occlude the tube.

Since the effects of intestinal obstruction develop chiefly from causes of a purely mechanical nature, the various types of this trouble are so very similar that the symptoms may be described in common.

These usually come on suddenly and are vague. As in all abdominal troubles of the dog, reflex vomiting is very pronounced and constant, and is greatly influenced by the position of the obstruction and the degree of medication that has been resorted to. If the obstruction occur in or near the duodenal region, and nematodes be present, the extreme degree of muscular contraction induced by it is likely to cause the latter to migrate to the stomach and be thence forcibly ejected with the vomitus, which is usually deeply bile-stained, owing to the tendency the act of vomiting exerts in causing expulsion of the contents of the gall-bladder and bile-ducts. This occurrence is apt to lead to a false diagnosis of stomachic and intestinal parasitism. If it be in the lower bowel, the vomitus will become offensively feculent, consisting of matter driven back into the stomach by antiperistalsis. The ileum, having the

smallest lumen of any portion of the intestine, is most frequently the seat of obstruction by foreign bodies. Such matters may be primarily arrested in their passage through upper parts of the bowel and induce the symptoms of obstruction, such hindrance being overcome by favorable conditions, only, however, to be permanently established lower down in the ileum. Constipation is complete, but a large portion of any feces on the distal side of the obstruction may be brought away by enemata. Diarrhoea may occur when the obstruction is near the gastric region. Blood may also be present in the alvine discharges. Pain is seldom very apparent, at least it is not manifested, nor is there much, if any, flatulent distention. Exceptions to this are witnessed in cases where the obstruction has either located itself or moved as far as the rectum, when great straining accompanied by piteous moaning indicates that the futile attempts at defecation are accompanied by distressing, hurtful sensations. These severe ineffectual expulsive efforts are attended by the passage of mucus or blood-stained mucus. Neither is vomiting in these cases such a prominent symptom, but the peculiar loss of motor and sensory power in the hind limbs (reflex paraplegia) is frequently seen. The etiology of the latter is still a matter of doubt, but the hypotheses of Leyden and Brown-Séquard are worthy of note. According to the former, the paralysis is to be explained by an ascending neuritis arising from the organs originally affected. Rosenbach, however, has demonstrated that if the wound in a traumatic neuritis remain aseptic, an extension of inflammation above the point of injury does not occur. Since we are not dealing with any traumatism, the above explanation is hardly satisfactory. On the other hand, the degree of pressure from the obstacle may be sufficient to bring about a mechanical destruction of the nervous elements in the intestinal walls, degeneration of the same, increase of connective tissue, and finally restoration.¹ The substance of Brown-Séquard's suggestion is that impulses travelling from the seat of irritation induce a hyper-excitability of the vaso-contractor centres and nerves controlling the arterioles of either the cord, efferent nerves, or certain groups of muscles, resulting in anæmia and starvation of one or all.

Another explanation is that a reflex inhibition is excited in certain motor areas by sensory irritation arising in the affected

¹ Strümpell: Text-book of Medicine.

part.¹ The presence of parasitic masses is usually accompanied by much meteorism, and, in the aforementioned case of stomach torsion, acute pain and tympanites were prominent symptoms. There is entire refusal of nourishment, the patient strenuously objecting to forced imbibition, anything thus given being invariably shortly regurgitated. A little water may be taken. The abdomen is usually drawn and hard, the intestines being gathered into the epigastric region, giving it a distended appearance. The expression is intensely dejected, the extremities cold, the pulse very small and rapid, and the temperature mostly falls. There are occasional nervous tremors, and the whole appearance and actions are suggestive that the animal wishes only to be left in peace that it may lie down and calmly await the end. If the obstruction be low down and some time in position, external abdominal pressure will cause local pain, even if the object cannot be distinctly felt.

In cases of acute obstruction the course of the disease may run on for a week or two, but in those developing slowly from constriction occlusion is gradual and the duration considerably longer, though sudden blocking may take place. The majority of cases of intestinal obstruction in the dog, unless relieved speedily by surgical procedure, terminate fatally. However, those from rectal impactions are more capable of recovery.

Treatment. As soon as prominent symptoms of intestinal obstruction have been recognized, an examination of the rectum by means of some long blunt instrument should be made in order to ascertain if coprostasis be present. By sounding in this manner a pretty accurate idea of the consistency of the feces may be obtained, and the exceedingly unpleasant digital process obviated. The abdomen is then to be examined at all points where herniæ could possibly exist. Physical examination of the abdomen, especially in lean dogs, often gives valuable information. Should intussusception be the cause of the trouble careful palpation may reveal the tumefied invaginated layers of bowel. Where foreign bodies, such as balls, etc., form the obstruction, it is often possible in this way to definitely decide their nature.

All obstruction cases call for prompt and attentive treatment. In cases of rectal obstruction enemata of equal parts of glycerin and warm water, soapsuds, or oil, containing one drachm of

¹ Ibid.

spirits of turpentine to the pint, frequently prove beneficial. When a patient can be made to submit, a continuous stream of warm water if persisted in for several minutes will soften and break up the hardest masses. If the stomach will bear it, which is commonly not the case, purgatives may be administered, but they are so liable to produce nausea and vomiting that we should rely mainly on operative measures to afford relief. As much of the mass as possible is to be removed by such instruments as one section of the bitch obstetric-forceps in the case of a large dog, or the handle of a spoon in that of a small animal. As soon as the rectum has been rendered permeable a quantity of semifluid feces is generally passed. After such measures, which are more or less irritating to the mucous membrane, it is well to inject some disinfectant, a two per cent. solution of creolin admirably answering the purpose, its value depending on its formation of a slippery coating over the parts.

It is little more than barely possible to relieve acute strangulated external herniæ by taxis; moreover, the immediate danger being too great to allow us to be dilatory in operative interference, the various methods for the surgical reduction of the same should be resorted to, for descriptions of which the reader is referred to the text-books. In turning to the older authors for the treatment of acute obstruction other than that of a fecal nature we find scarcely any advocacy of operative procedure; indeed, one prominent teacher asserts his opinion that an operation would be as bad as the lesion. Remedies calculated to relieve spasm, purgatives, opium, etc., are recommended, the counsellors of this method of treatment being evidently forgetful that the effects of intestinal obstruction form the severest and most intractable conditions known to canine pathology. The highly excitable stomach of the dog becomes actively engaged in expelling the putrid contents of the intestine which have been forced backward into it, and is equally responsive to the irritation of foreign bodies introduced in the shape of drugs. In fact, in nearly every case it is perfectly useless to attempt any medication *per orem* at all. Stimulants, however, such as ether, trinitrin, caffein, may be hypodermically injected with advantage. Where the obstruction is beyond the reach of rectal interference and vomiting precludes the possibility of administering remedies the surgeon should not hesitate to operate

immediately. No good comes of waiting, early operations offering much better chance of recovery. It is only after the inflammatory changes at the seat of lesion have developed into gangrene that the percentage of recovery is reduced to a minimum, but even then, by excision of the mortifying portion, life may be saved. With our modern antiseptic surgery no dog should be allowed to die without an attempt being made to render the canal permeable. We must remember that it is only by inducing a return of normal peristalsis, when a foreign body has once become lodged at any point of the intestinal canal, that we can hope for its removal. Should even a slight inflammatory process have started any further peristaltic action is at once checked. Every decided inflammation renders the muscular layers œdematous, and thus impedes their activity. In cases where an unduly large body has become deposited the muscular coat is so stretched as to become still further incapacitated for its proper functions.

We have here, therefore, additional factors that warrant surgical interference. The differential diagnosis of the various forms of obstruction without a history is, of course, usually an impossibility, but if the practitioner can reasonably suspect the existence of one form or other the immediate performance of laparotomy as an exploratory measure in all serious cases is justifiable. All cases of volvulus, intussusception, neoplasms, and cicatrices call for laparotomy, with the necessary supplemental operations demanded by the exigencies of each particular case. Should the two former conditions be irreducible by simple measures, they, with the two latter, require the operation of enterectomy. Enterotomy is applicable only to cases of obstruction by foreign bodies and gunshot-wounds.

Laparotomy should be performed under the strictest antiseptic conditions, instruments, sponges, the hands of operator and assistant alike being thoroughly disinfected. It is best to cleanse the skin in the immediate vicinity of the contemplated incision by warm water and soap and some powerful antiseptic solution, as well as to shave it of its hair. A sufficient number of threaded gut ligatures should be prepared and laid handy, care being taken that they are particularly well disinfected. The lateral incision through the abdominal wall, while not so convenient for exploratory purposes as the median one, is, after a careful consideration of the pros and cons of each, undoubtedly the more preferable in the dog. There need be little

bleeding, especially if the muscular tissue is teased apart. The great objection to median incisions lies in the danger of the dissected parts failing to become completely united. The wall being least vascular in this region, and having to bear the pressure exerted by the pendent coils of intestine, which pressure is materially increased at each inspiration, the sutures are apt to give way before the healing process is firmly established, and a portion of the bowel protruding by gravitation through an aperture thus framed tends to form a hernia. This danger is almost entirely obviated by the lateral incision, the animal invariably lying with the wounded side uppermost. The incision through the integument may be on either side and should be made a short distance from the borders of the false ribs in a vertical or slightly oblique direction downward and forward, such a one admitting of subsequent unobstructed drainage. This position of lateral section is most satisfactory, inasmuch as it places all parts of the abdominal cavity within easy reach for exploration. The incision should first be long enough to allow admission of the thumb and one finger, and, if found necessary, can be enlarged later in either direction. In cases of large animals it will generally be found unavoidable to make such a wound that the whole hand may be allowed to enter the cavity. The subcutaneous tissue and muscular layers are then either successively divided in the same direction or by a method which prevents any great degree of hemorrhage, viz., teasing the fibres of each individual coat apart, and according to the direction in which their course lies. It is well to have an assistant with a small tenaculum handy, with which to hold back the divided parts, more especially if the subject for operation be a member of the smaller breeds. All bleeding having been arrested, the omentum is to be gently pushed aside, and unless the position of the obstruction has been located through the wall prior to the commencement of the operation, the operator will now make a systematic digital exploration, beginning in the pelvic region. The bowel on the distal side of an obstruction is usually collapsed, and if any portion in that condition be found it is to be withdrawn outside the cavity and dexterously passed through the fingers and returned until the seat of lesion is reached, any operation being continued outside the cavity. Extrusion of the bowel is to be prevented as much as possible, but if such incidentally take place it should be pro-

tected by envelopment in a few layers of warm sterilized gauze, which must be kept at an equable temperature as nearly as possible. The obstruction being found, the condition of the tissues in the immediate neighborhood is to be carefully noted, and according as to whether a gangrenescent condition has developed or not will depend the necessity of simple incision or excision of a part.

In closing the wound the edges of the muscular coats may be stitched by either gut or silk ligatures, preferably the former if the antiseptics is known to be thorough, as the ends may be cut off close and do not need to be left hanging out of the external wound, as do the latter. The skin is loosely united by silk sutures, in order to leave passage for the subsequent drainage. An antiseptic dressing should then be applied and a moderately tight bandage bound round the abdomen and kept on for a few days, in order to prevent the patient from attempting to tear open the wound before adhesion has taken place, the dressing being repeated twice daily.

Enterotomy may be performed for the relief of obstruction by any foreign body, provided the inflammatory process that the object has induced is not of such intensity that gangrene is threatened, when enterectomy is the only hope of a cure. The incision through the intestinal wall should be made longitudinally and in a lateral position midway between the lesser and greater curvatures. A circularly inclined incision when cicatrized might lead to dangerous stenosis. The intestine being suspended from the roof of the cavity, it will be readily understood that such an incision when sutured will not so readily permit of penetration by fecal fluids as one situated inferiorly on the greater curvature. The obstructing body being removed, the operator should gently compress the bowel between the thumb and first finger for a short distance above and toward the seat of lesion so that any fecal matter may be expelled, care being taken that none of it enter the cavity. The parts are then to be thoroughly washed with a warm disinfectant solution, sutured, returned to the cavity, the omentum replaced as near as possible in its normal position, and the wall closed.

Enterectomy. As already stated, the indications for this operation are irreducible volvulus and intussusception, neoplasms, cicatrices, and local gangrene, whether from inflammatory changes occurring as a result of an obstruction or from arrest

of the blood-supply as a result of rupture of one or more mesenteric arteries, which may happen in any violent accident, such as a run-over. It follows that in all severe cases of this nature, when there is reason to suspect from the character of the pulsations and temperature that internal hemorrhage is going on, laparotomy is justifiable as an exploratory measure. The branches of the mesenteric artery leading to that portion of the bowel it is intended to remove should first be ligated by the finest gut sutures, care being taken that no vessel be included unnecessarily. It is usual to remove a triangular portion of the mesentery so that the cut edges may be sutured after the same has been done to the bowel. By means of the scissors the intestine is now cut transversely across well into the healthy tissue on either side of the lesion. On cutting across, the muscular coat immediately begins to contract, causing considerable eversion of the mucous membrane, which gives it the appearance of rolling on itself inside out.

Enterorrhaphy. In applying sutures to effect rapid coalescence of the separated edges of a simple incision of the bowel, as well as those of a completely resected portion, an important physiological principle must be remembered, viz.: that union does not readily take place between mucous and serous surfaces. Accordingly, the mucous surfaces at the edge of a simple incision may be approximated and held in position by ordinary interrupted sutures (Figs. 1, 1a), which should be of fine sterilized gut, inserted at comparatively short intervals, and the ends cut off close to the knot. Or a more improved method of suturing is that bearing the name of "Lembert" (Figs. 2, 2a), with its modifications known as the Czerny-Lembert (Figs. 3, 3a) and "Gussenbauer" (Figs. 4, 4a). The first of these is theoretically more correct for simple longitudinal incision than the ordinary suture above referred to, for the reason that in the latter the serous, muscular, and mucous coats are pierced, thus allowing a possible passage for egress of intestinal contents and bacteria, whereas in the former the suture is passed through the serous and muscular coats only, leaving the mucous layers intact. The Czerny-Lembert and Gussenbauer sutures are both used for enterectomy operations, but are so irksome and complex that they are far better superseded by simpler measures. Moreover, the edges of the divided wall become, when approximated by that method, turned considerably inward toward the long

FIG. 1.

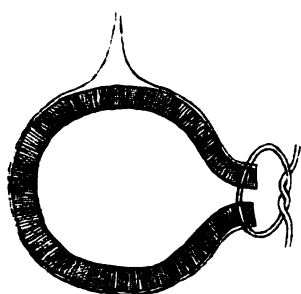


FIG. 1a.

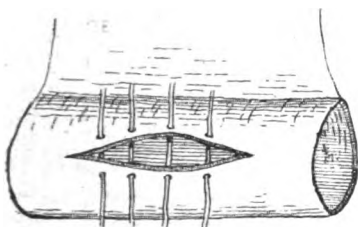


FIG. 3.

FIG. 2.

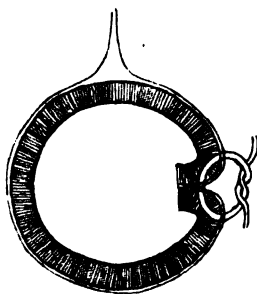


FIG. 2a.

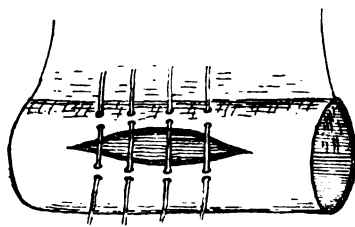


FIG. 4.

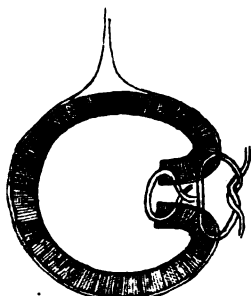


FIG. 3a.

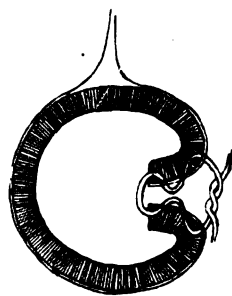
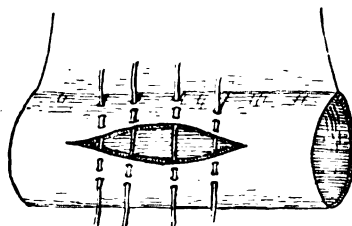
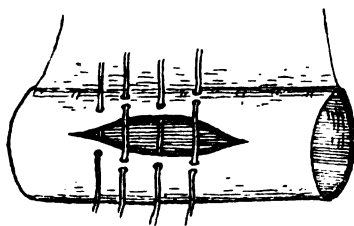


FIG. 4a.



FIGS 1, 2, 3, 4 (modified). After James Bell in Buck's Reference Handbook of the Medical Sciences.

FIGS. 1, 1a. Simple interrupted suture, bringing into apposition the mucous surfaces.

FIGS. 2, 2a. "Lembert" suture, bringing into apposition the serous surfaces.

FIGS. 3, 3a. "Czerny-Lembert" suture.

FIGS. 4, 4a. "Gussenbauer" suture.

axis of the canal, which must, of necessity, seriously reduce its calibre, if only temporarily. Various supports have been placed into the canal experimentally to facilitate the insertion of the sutures. Cylinders of sterilized gelatin, turnip, potato, etc., and more recently the Murphy button for the human subject have been introduced, which latter, however, on account of its dimensions is not applicable to the dog, the smallest size made being serviceable only for members of the larger varieties. Whether a support is used or not, the sutures should be inserted in the following order, so that ridges and corrugations may not result: the first at the level of the mesenteric attachment, the second immediately opposite at the free border, the next two midway between these on either side, and so on until it is considered that perfectly tight juxtaposition of the parts has been secured. It is with the greatest difficulty that the parts of a resected bowel can be adjusted so that mucous, muscular, and serous coats are brought into proper apposition. The extreme eversion of the mucous coat and contractions of the muscular layers render the desired apposition almost an impossibility. However, by inserting the sutures moderately close to the edge of the serous coat, passing them through all three coats and drawing them comparatively tight, the nearest possible approach to the desired condition is obtained, and union by adhesive inflammation follows. The relative value of silk and gut ligatures in this operation appears to be a matter of controversy. It is claimed that absorption of the latter takes place so soon that the loop slackens and the wound is liable to gape, and that the former in any case usually find their way into the canal. In the few experimental and clinical cases that have come under my notice gut ligatures have been used, and have apparently brought the reunion of the parts to a successful issue.

It remains to make some reference to the treatment of the different varieties of congenital malformation of the anus and rectum. These it is undesirable to treat. Unless there be a properly formed muscular sphincter present the reasons are obvious. No one would wish to keep an animal with inability to control the act of defecation. Operative treatment should only be attempted when the two pouches are separated by a simple membranous septum analogous to the hymen, admitting of perforation, in which case a small trocar will serve

the purpose. Care must be taken that subsequent cicatricial contraction does not take place.

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THE HORSE AS A PRODUCER OF ANTITOXINS.¹

BY OLOF SCHWARZKOPF, V.M.D.,
 CHICAGO, ILL.

AT a time when we hear so much of the coming "horseless age," when the praise is sung of the "silent steed," and the horseless carriage parades our streets, even the calm among us are joyous to see the horse once more in a new field of utility. Of the many uses to which the horse has been put by man for thousands of years none has ever been loftier than its recent employment as a producer of antitoxins for some of the most dreaded of human diseases.

It will be known to you that the preparation of antitoxins is based upon the discoveries of Behring, who proved "that the blood-serum of an animal rendered artificially immune against certain infectious diseases injected into another animal will protect it against such disease or even cure it after infection." The weak point of this new theory is our lack of understanding of the nature of "immunity," inasmuch as there are several theories, notably those of Pasteur, Metschnikoff, Buchner, Behring, Roux, and others. Each opposes the other, none fully explains its phenomena. We know, however, by empirical observation that certain animals or classes of animals are protected by Nature, are "naturally immune" against particular diseases which are fatal to others. We also know that a previous sickness of certain diseases of men and animals, such as scarlet fever, smallpox, yellow fever, influenza in horses, and many others, usually produces an "acquired immunity," at least for a

¹ Read before the Thirty-second Annual Meeting of the U. S. Veterinary Medical Association.

reasonable length of time, against another attack of the same disease. Moreover we know that we can render animals "artificially immune" against some infectious diseases by protective inoculation. Lately we seem to have reached the point when "curative immunity" can be produced in time to counteract the infection and ward off the fatal toxic effects of certain germ-diseases by the application of antitoxins. It is true that this new therapeutic applies only to a few diseases, diphtheria, tetanus, and a few forms of septicæmia, such as puerperal fever in women but it is no conjecture to conclude that others will be added in proportion as our knowledge of the pathogenic germ-life becomes clearer and our laboratory methods improve in practicability and certainty of results.

The production of the various antitoxins is preceded by the preparation of their toxins in the bacteriological laboratory. This has been already described in our professional journals, and only for a better understanding of this paper I wish to recall to you that the virulent bacilli of diphtheria and of tetanus and the streptococcus of septic diseases are secured from patients suffering from these diseases, and cultivated on bouillon in large flasks in an incubator for several weeks, when they are filtered through a Chamberland filter, whereby the germ remains outside the filter, the filtrate being the original fluid substrate charged with the toxin. The whole process is by no means simple, but calls for tedious work, painstaking accuracy, and patience, and in spite of all this may bring disappointment and unexpected difficulties, which must be overcome before further steps can be taken and success attained.

Having thus prepared the toxins, the animal for inoculation is selected, and it has been found that the horse is preferable to any other animal. He is most susceptible to these toxins, most tractable in the almost painless operations of remittent injections; he yields the largest amount of blood-serum from one bleeding, and most of all produces a therapeutic serum of the strongest immunizing value. The horses selected at our college for this purpose are healthy, strong, and large animals, of good disposition, between the ages of six and eight years, and they make a favorable impression upon those timid visitors who yet entertain doubts as to the value of serum-therapeutics.

What interests us most, as veterinarians, is the effect which the injections of the different toxins have upon the organism of the horse. There are certain symptoms, such as the rise of

temperature, which are common to all toxins; otherwise, however, they are so widely different that it is well to give a separate description of each.

The inoculation with diphtheria-toxin has been lately described by Dr. Gill, of New York, and I shall, therefore, only briefly mention our own method. As the best places for injection we select the thorax and flanks, the proximity to the extremities being avoided on account of subsequent œdematous swellings. A piece of skin of the size of a dollar is shaved, washed, and disinfected with a solution of bichloride of mercury. The toxin is then drawn into a sterilized syringe of the capacity of 10 to 50 c.c., and slowly injected subcutaneously. We commence with a small injection of 2 c.c. of a weak toxin, and gradually increase during several weeks to 50 c.c.

The effect of diphtheria-toxin upon the system of the horse is mainly a rise in temperature of one and a half to three degrees, a quickened circulation, and accelerated respiration, but not in a very pronounced type. From one to four hours after the injection a certain uneasiness of the horse is sometimes observed, but grave symptoms, as described by others, have not been seen by us. I think that much depends upon the surroundings of the horse, and that a suitable diet and a comfortable and large box-stall prevent the horse from fully realizing the unpleasant feeling which no doubt he is undergoing. On the whole, however, the horses evidently enjoy the easy life with which they have been favored; they thrive, and become easily fattened.

Very different is the effect produced by the injection of tetanus-toxin. To the sceptic there could hardly be a more convincing proof of the scientific correctness of the elimination of toxins during the progress of some germ-diseases than to witness the effect of this particular toxin. After the injection of 2 c.c. of a weak tetanus-toxin, we observe within ten minutes very pronounced symptoms of ill-feeling. The rise of temperature follows almost immediately, the pulse becomes stringy, and abdominal breathing sets in. In about one hour the masseter became hardened and painful to touch, accompanied by a peculiar twitching of the muscles of the nose. In two hours and a half the temperature rose to 104.2°. Occasional grinding of the molar teeth was followed by outbreaks of great nervousness. At intervals the neck was thrown backward and upward and tetanic spasm of the muscles of the neck was noticed, re-

sembling the symptoms observed in a horse that is trying to vomit. Later, light local spasms could be produced in any region by a simple touch. These symptoms lasted for about eight hours, when they gradually disappeared.

It is interesting to mark the effect of the subsequent injections of increasing quantity of toxin with a decreasing severity of symptoms. It is as if one could see the developing immunity, for the gradually increasing power of resistance of the horse against this toxin is very apparent. While our last injection was as large a dose as 25 c.c., beyond a rise in temperature to 104.4° we noticed none of the symptoms described as observed at the first injection.

There is great likelihood, however, that all horses do not react with equal gravity at the first injection. We inoculated experimentally an old and hardened horse with 20 c.c. of toxin, and anticipated very grave symptoms at first. For about an hour, however, the old horse stood motionless, exhibiting no reaction beyond a sudden rise in temperature of 2° . Then he showed gradually uneasiness, with occasional spasm of the neck and a peculiar arching of the back. Within two hours and a half the temperature rose to 104.2° , the horse became extremely sensitive to touch, and pressure at the point of injection in the shoulder produced spasm of the muscles in that region. After several hours, being suddenly approached by a stableman, he fell backward, and died within fifteen minutes under tetanic convulsions.

Symptoms still different are produced by the injection of streptococcus-toxin. The main effect is an elevation of temperature of one to two or more degrees, which extends over the second or even the third day. The other symptoms become visible within three to four hours after injection, and are not very marked but none the less severe. The horse stands rather quiet, the head bowed downward, paying no attention to its surroundings, noise, or food offered to him. He remains so for hours at a time, and he gives the impression of being a "pretty sick horse," as a visiting veterinarian expressed it the other day. After the fifth injection of this toxin the horse shows symptoms of colic-pains, looking at his flanks and biting them occasionally.

These are our observations up to date, and as far as I know the effects of the tetanus-toxin and streptococcus-toxin upon the horse have not been published before. Inasmuch as these

observations were conducted on a limited number of horses they are subject to modification, but on the whole they will be found to be correct. The symptoms, as described, will greatly depend upon the preparation of the toxins, the germs producing different toxicity according to the soil on which they are cultivated. It is a matter of bacteriological experience to select a material of such chemical composition as will produce the highest toxicity, and much depends upon the skill of the bacteriologist. I think that some of the toxins if properly prepared may be profitably used for demonstrative purposes for students, as the effect is so marked and characteristic.

After the horses have been inoculated with these toxins for a sufficient length of time to endure large doses, and after having fully recovered from the effect of the last injection, a sample of blood is drawn, and the serum separated under aseptic precautions, and injected into experimental animals which have previously been infected. If by this experiment the serum proves to contain sufficient antitoxic properties, large quantities of blood are drawn for the preparation of antitoxin for therapeutic purposes.

As to the application of the tetanus-toxin and streptococcus-toxin in veterinary practice, very few, if any, trials have yet been made, as these new therapeutic agents are of so very recent date. We treated one horse, which was beyond hopes of recovery, with a 10 c.c. dose of tetanus-antitoxin merely to satisfy the owner, who wanted us to try anything to save the horse. Although this was the entire quantity we had on hand, and too small a dose, the owner informed us the morning after the injection that there was a noticeable improvement in the condition of the horse, but he died the same night. I report this negative result in order to dispel extreme expectation. As reports from human hospitals indicate, the early application of tetanus-antitoxin, if accompanied by proper surgical treatment of the wound from which the infection started, is bound to result in a cure. With the frequency and gravity of tetanus in the horse we certainly look toward this new therapeutic agent with great hopes, and it remains to be seen whether its success in veterinary practice will be equal to that in human medicine.

Whatever may be the future of serum-therapeutics, I should warn you against too much enthusiasm. Let us cautiously try these new remedies, if they are such, and not give a judgment off-hand, as has already been done by some. Success will

alternate with failure, and the supporters and enemies will view it from an opposite standpoint. As far as veterinary science is concerned it is certain to play an important part in the development of serum-therapeutics, and to us as members of this science it will add greater responsibilities and insure greater opportunities.

SERUM-THERAPEUTICS.¹

BY S. J. J. HARGER, V.M.D.

THE discovery of serum-therapeutics, now applied in practice, has opened a new era in the treatment of disease. Although confined as yet to a limited number of diseases, and not yet thoroughly tested, this method of treatment has opened a field of experimentation whose limits to-day we cannot define. A general *résumé* of the subject may not be amiss before this meeting.

It is known that the vegetable alkaloids, abrin, ricin, etc., very poisonous to animals, can, when given in repeated and very small increasing doses, develop an immunity in these animals enabling them to withstand a quantity of these substances rapidly fatal to those not previously treated. A product is formed in the system which becomes sufficiently abundant to neutralize the toxic action of these poisons. Likewise in morbid processes, the repeated introduction into the system of a microbe or its product, called *toxin*, causes the formation in the economy of a substance called *antitoxin*, which is capable of counteracting the pathogenic action of such microbes or their poisonous excretions. This, in a word, is the basis of the so-called anti-toxin treatment. The antitoxin thus successfully combats, reciprocally, the microbes and their products to which it owes its origin, at least indirectly.

Serum-therapeutics was first studied in a crude way in cow-pox and septicæmia in the dog, but has only attracted special attention since Behring and Kitasato have demonstrated the properties of the blood-serum of animals immunized against tetanus and diphtheria. They recognized in the blood-serum

¹ Read before the Pennsylvania State Veterinary Medical Association at Cresson Springs, September 3, 1895. The experimental information is drawn from *Annales de Pasteur Institute*, September, 1894.

of such animals both preventive and curative properties when injected either before or after the introduction of disease germs into the body.

Some antitoxin blood-serums have the power of counteracting the virus of other diseases. Thus, the serum of animals immunized against symptomatic anthrax is effective against the bacillus of acute septicæmia (Duntschman). The serum of a healthy man, and at times that of the horse, is immunizing against the intraperitoneal injections of cholera (Pfeiffer). The prophylactic action of blood-serum is therefore not absolutely specific; it is possessed in some instances by normal serum.

Both the toxin and antitoxin are albuminous bodies, very similar in chemical properties, but different in physiological action and precipitated by alcohol, which enables its preparation in a condensed form.

Preparation of the toxin. The process of preparing the toxin varies with the variety of the specific microbe. Suffice it to say that the latter is grown upon a favorable medium, such as bouillon, gelatin, agar, etc., the mature culture (diphtheria) being passed through a Chamberland filter; the filtrate, a clear liquid containing the toxin, is preserved in well-filled, corked bottles. It gradually loses its activity.

Immunization of the animal. This may be accomplished by subcutaneous injections of small repeated doses of pure or heated toxin; a better method, that of Roux and Villard, consists in mixing three parts of toxin with one of Gram's solution of iodine. The initial dose in the rabbit is $\frac{1}{2}$ c.c. (7 drops) repeated every three or four days for several weeks; the dose is then gradually increased, and finally undiluted toxin is given. The horse is usually the animal selected to furnish the antitoxin serum of tetanus and diphtheritic virus, but the serum can be obtained in large quantities by bleeding from the jugular vein. and, besides, this serum has proved to have a strong antitoxic power. Of course he must be free from any disease, and glanders must be eliminated by test-injection of mallein. For diphtheria the cow, dog, sheep, goat, and rabbit can also be used. The cow is very sensitive to the diphtheritic poison, even fatally so; the toxin is excreted with the milk.

Formation of the antitoxin. The antitoxin is a cellular secretion, but it is not determined which set of cells are active in this process. It is not a transformation in the body of the toxin injected. The antitoxin diminishes with the cessation of the

toxin injections. In one experiment, two rabbits were each injected with 103 c.c. of tetanus toxin, the first in 33 daily doses and the second in 9 larger doses. The serum of the first neutralized 150 parts of tetanus toxin; that of the latter only 25 parts. The two serums were of unequal preventive power; the quantity of toxin injected was the same in both cases, but the methods of administration differed. By successive bleedings in the rabbit a quantity of blood equivalent to the entire volume of the circulation can be removed, and the antitoxic power of the blood is produced as rapidly as it is drawn away without any new injections of toxin.

An important question is the manner of action of the antitoxin after introduction into the body. In diphtheria and tetanus it counteracts the effects of the toxin; in some diseases it is protective only against the microbe and such animals as remain as sensitive to the toxin as those which are not immunized.

A mixture of antitoxin with an immunizing power of one billion and tetanus-toxin 1/1000 c.c. of which destroys a mouse, in proportion of 1-900, becomes harmless. One-half c.c. (1/1800 c.c. serum) injected into a guinea-pig does not produce tetanus. This result, however, is not always the same; a mixture innocuous to mice is fatal to guinea-pigs. In eight out of ten guinea-pigs $\frac{1}{2}$ c.c. (1-900) is inactive, while the remaining two develop tetanus; again, 1 c.c. (1-500) is harmless to guinea-pigs, while 3 c.c. cause tetanus.

These experiments show that it is not a question of neutralization or chemical union between the toxin and antitoxin in the blood, but rather the stimulating action of the latter upon the animal cells, enabling them to resist the action of the virus of the disease.

The existence of a previous disease or a previous injection of microbic products is not without effect. It weakens the animal tissues, which respond less strongly to the stimulating action of the antitoxin. Roux and Villard injected five guinea-pigs with $\frac{1}{2}$ c.c. of antitoxin-serum and toxin (1-900) with a negative result. Five other guinea-pigs, which had some time before been immuned against the vibron of Massanah, developed tetanus, with the same treatment as the preceding five. One-third c.c. only produced tetanus when the animal was subsequently injected with microbic product, coli bacilli, etc.

In eighty days this horse (the details of immunization of which I will cite at the end of this paper) received over 800 c.c.

of toxin without any symptoms other than a slight local œdema and an elevation of temperature of one degree.

The serum of a horse immunized in this manner had a preventive power of more than 50,000; that is, a guinea-pig inoculated with 1/50,000 part of its own weight of the serum twelve hours before will resist the action of $\frac{1}{2}$ c.c. of a virulent culture of diphtheria bacillus. One-tenth c.c. of this serum and 1 c.c. of diphtheria toxin do not produce any œdema in the guinea-pig when injected under the skin. The horse is kept in this condition of immunization by injections at intervals of fifteen to twenty days of diphtheritic toxin (about 200 to 250 c.c.). Roux and Martin immunized the horse with 40 c.c. of the toxin, heated to 65° C., given in eight doses at intervals of ten days; he was then injected with 1 c.c. of pure toxin repeated at regular intervals. The virulent bacilli are also employed for this purpose. The serum employed by Roux and Martin in children and guinea-pigs in doses of 1/10 c.c. killed the latter in forty-eight hours. Guinea-pigs injected with a quantity of serum equal to 1/100,000 part of their weight resisted a dose fatal to control-animals in five days; 1/50,000 immunized them against a quantity fatal in forty-eight hours.

Infection having taken place, the quantity of serum necessary to preserve life must be in proportion to the time elapsed since the introduction of the poison into the system. Guinea-pigs receiving a dose fatal in forty-eight hours survived after an injection equal to 1/1000 part of their weight six hours afterward; the same treatment twelve hours afterward was ineffective. This is the principle of the serum-treatment of diphtheria in children which in many instances has given such happy results. The antitoxin is not of uniform strength in all cases, a fact which explains the alarming and even fatal symptoms occasionally seen. The dose must be graduated according to the virulency of the serum, the weight of the subject, and the time elapsed since the introduction of the poison.

The following illustration will show the manner of immunization: Horse, seven years of age; weight 900 pounds. Serum very active; 1/10 c.c. killed guinea-pig in forty-eight hours. Injected hypodermically in the neck or behind the shoulder.

1st day. Injection, $\frac{1}{4}$ c.c. toxin (1/10 iodine); no reaction, local or general.

2d. Injection, $\frac{1}{2}$ c.c. toxin (1/10 iodine).

4th, 6th, and 8th. Injection, $\frac{1}{2}$ c.c. toxin (1/10 iodine).

- 13th, 14th. Injection, 1 c.c. toxin (1/10 iodine); no reaction.
17th. Injection, $\frac{1}{4}$ c.c. pure toxin; slight œdema, no fever.
22d. Injection, 1 c.c. pure toxin; slight œdema, no fever.
23d. Injection, 2 c.c. pure toxin; slight œdema, no fever.
25th. Injection, 3 c.c. pure toxin; slight œdema, no fever.
28th. Injection, 5 c.c. pure toxin; slight œdema, no fever.
30th, 32d, 36th. Injection, 5 c.c. pure toxin; slight œdema, no fever.
39th, 41st. Injection, 10 c.c. pure toxin; slight œdema, no fever.
43d, 46th, 48th, 50th. Injection, 30 c.c. pure toxin; œdema marked, disappearing in forty-eight hours.
53d. Injection, 60 c.c. pure toxin; œdema marked, disappearing in forty-eight hours.
57th, 63d, 65th, 67th. Injection, 60 c.c. pure toxin; œdema marked, disappearing in forty-eight hours.
72d. Injection, 90 c.c. pure toxin; œdema marked, disappearing in forty-eight hours.
80th. Injection, 250 c.c. pure toxin; œdema marked, disappearing in forty-eight hours.

TETANUS. The toxin of *tetanus* is very active. A healthy horse has been destroyed by 1/10 c.c. (2 drops). Horses can be immunized against tetanus in the same manner as against diphtheria. The toxin, pure, heated to 65° C., or mixed with iodine, is injected in repeated and gradually increasing doses at intervals. The animal thus becomes so "accustomed" to the poison that 250 to 300 c.c. can be given at a single injection, enough to destroy 2500 horses (Nocard).

This serum is preventive and curative; it can be used as a vaccine or a therapeutic agent. Injected under the skin of a tetanic subject, it is efficacious only in proportion as the time elapsed since the infection has been short. I have no statistics of this treatment in the horse, but hope to be able to give it a trial. It is useful as a preventive only when the virus, or shortly afterward, is introduced into the circulation. Unlike diphtheria, tetanus is not recognized until the system is saturated with the poison, then no treatment is of much avail.

The serum may be recommended as a preventive in places where tetanus is almost epizootic, or in certain operations and wounds of the extremities which are frequently followed by tetanus, in addition to the regular surgical treatment. For this

purpose Nocard injects under the skin behind the shoulder 10 c.c. of antitoxin-serum, repeated in two weeks.

Let me suggest peroxide of hydrogen as a local dressing in wounds of the extremities in particular. This preparation freely gives off oxygen, and the tetanus bacillus, which is confined to the seat of traumatism and does not enter the circulation, cannot live in a medium exposed to oxygen.

ADDRESS TO THE ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA.¹

BY J. H. WATTLES, V.S.,
OF THE KANSAS CITY VETERINARY COLLEGE.

WHILE the subject of this address is ostensibly that of the results that have been obtained by prescribed entrance examinations, and as the subject is to-day largely prospective as far as my individual experience goes, my fellow-members will pardon me if some digression is made, and some of the results considered that may be obtained by having positive and fixed lines for entrance examinations to be conducted upon, as well as some of the conditions that exist and evils that might result were each school allowed to act as its own censor in the matter of matriculation and graduations.

With the organization of the several faculties of the veterinary medical colleges of the country in the Association of Veterinary Faculties of North America the fraternity and public had every reason to believe that a new era had dawned upon our chosen profession, and that, while the pathway might not be strewn with roses, the way was clear for our kindred professions to see that we were entitled to stand in the front rank of the learned professions and that we were capable of maintaining that rank.

With solely fraternal and educational objects in view, the Association of Faculties was formally organized in Philadelphia last September, and, to those who had the pleasure of attending that meeting, will always remain a remembrance of the kindly spirit in which all of the deliberations were maintained. Without acrimony or intemperate language, and with a full and

¹ Read at Des Moines, Iowa, September 10, 1895.

generous consideration of the many different conditions and surroundings of the several schools, the constitution of the Association was adopted, and I earnestly believe with liberal ideas on the subject of advanced education we meet again to-day.

There is no reasonable doubt existing in the mind of any impartial and disinterested person of the necessity of a higher standard of educational requirement in the matriculation examinations of our prospective students, and we can all see very plainly that it is only a matter of a very short time when every college that will be recognized as coming up to the standard will have adopted a minimum grade for the admission of students. With these points so clearly in view, and with the upward and onward tendency of the leaders in our profession, and with positive knowledge that different States are formulating laws regulating veterinary practice, it seems to me to be a rational conclusion that the proper thing for us to do is to act in the matter at once, and not wait until compelled to act, and for all of the colleges of this continent to unite with this association in endeavoring to create a certain standard in the admission of students, in their advancement in their respective studies, the length of time they shall be required to attend, and in their final graduation.

By having positive rules laid down for the admission of students every one will be perfectly satisfied that the gentlemen who graduate are capable, educated men. We will then be assured that men are not allowed to graduate simply because they have been in empirical practice for a time, or because they are druggists, or because they hold some classical degree or a diploma from some normal school. On the contrary, we will know that they are men that have been educated for the veterinary profession, in veterinary colleges, and are capable of practising in that profession.

It is important to us all that the moral character and business principles of men about to enter our profession be inquired into before they are allowed to matriculate. My belief is that every applicant should be required to fill out a printed blank agreeing to comply with all of the rules of the college he wishes to enter, and also agreeing to comply with the code of ethics of the State in which he may enter practice. This surely would be no hardship for any honorable man, and we do not desire any other in the profession. It is surely a very embarrassing thing for us to come in contact in our practice with men that are

graduates of recognized colleges and to feel that we do not care to affiliate with them because of some underhand business methods, or because they are drunkards or gamblers, and it seems to me that close scrutiny should be made of intended students before admitting them.

One very important matter that needs the close attention of this Association is that of the actual time of attendance of students. It seems to me to be a ridiculous proposition to say in an announcement that we require attendance on a certain number of courses of six months each, and then allow men to attend only a fraction of the time. To illustrate this phase of the subject: Suppose a student enters in November, 1893, and he is allowed to come up for final examination the following spring, and is passed, the student's name appearing in the list of graduates in the catalogue issued in 1894. Could this student have attended more than four and a half months actual time?

Suppose the fact to exist that schools were in the habit of allowing men to enter the school and appear for final examination at the end of one school year, and even the year shortened by the late appearance of the student. Could a student acquire sufficient knowledge in so limited a time to become proficient in our science? The men usually applying for time allowance are the practitioners from some small town where there had been no qualified veterinarian until a man recently graduated entered the neighborhood and forced the older practitioner to protect himself by gaining a diploma, or they are forced into college by the action of State laws. My experience with this class of men, as students, is that they are the slowest to grasp ideas in school, and make the poorest practitioners when out.

The requirements of the college that I have the honor to represent, during the first two years of its existence, were the same as in other two-year colleges, and I can look back over our brief period of existence and see nothing to regret, except the fact that we admitted during our first two years men that had been in practice for some time, and allowed them to appear for final examination at the end of the first year. Happily for us, we were soon satisfied with the experiment, and the practice was discontinued. During the same period we allowed licentiates and graduates in pharmacy to enter the senior class, but we soon discovered that the time was too limited for them to acquire sufficient knowledge, and this practice was also abolished.

For the past two years our matriculation examination has been up to the standard required by this Association, consequently we were in no manner disturbed by adopting the rules of this body, and, unless my judgment is very much at fault, there is not a college in America that would not be benefited by adopting the same rules and maintaining a rigid adherence to them.

All applicants for matriculation in this college are now required to fill out the printed application furnished by the school, in which they agree to conform to the established rules. All applications for admission are acted upon at a regular meeting of the faculty, and the application must be approved by three-fourths of the number present at such meeting. This takes the responsibility out of the hands of one man, and places it where it justly belongs, in the hands of the entire faculty. We require an actual attendance at 80 per cent. of all lectures, and no student is allowed to come up for examination that has not attended the required percentage. This does away with the practice of students entering and leaving school at will, or inattentance upon lectures or other forms of instruction.

Every inducement is held out to our students to take the three years' course, with the result that 50 per cent. of those who entered last year have accepted, and fully as large a percentage will begin the three years' course this session. As we have not felt strong enough as yet to put on a compulsory three years' course, we have met the condition as far as we possibly could by making an optional course of three years, from which is but a short step to the regular course prescribed by the representative body of our profession, and now adopted by the leading colleges of America.

With the firm conviction that in union there is strength, and with every desire to advance the interests of our profession, with the belief that it is only by union in action, kindness in our discussion, charity to all, that we can reach the goal of our ambition in our life-work, I thank you for the honor you have conferred upon me by giving me your attention.

[Since preparing this address for this Association, the Kansas City Veterinary College has decided upon a three-year compulsory course, beginning January 1, 1896. This present session is the last that students will be admitted for a two-year course.—J. H. W.]

TETANUS.¹

BY S. H. KINGERY,
CRESTON, IOWA.

THIS is a term applied to that infectious disease of the horse characterized by involuntary, painful, and continued or tonic spasm of more or less extensive groups of voluntary and involuntary muscles, these spasms during their continuance being marked by periods of exacerbation and of repose.

Pathology, nature, and causation. It has been the opinion of some very learned authors that tetanus depends, first, upon the excessively excited state of the nerve-tissue of the spinal cord induced by hyperæmia and morbid conditions of the bloodvessels, exudation, and disintegration resulting therefrom; secondly, that the spasms are the result of the persistent irritation of the peripheral nerves, by which the exalted excitability of the cord is aroused, and thus the cause which at first induced in the cord its morbid susceptibility to reflex action is subsequently the source of that irritation by which the reflex action is excited.

We cannot go back on the fact that it is an excited condition of the nervous system, and considered to be associated with a peculiar condition of the blood, produced undoubtedly by the ravages of the specific bacillus of tetanus. Thanks to some of the observers, as Rosenbach, Nicolaier, and Kitasato, the specific bacillus has been discovered. Carle and Rattone, in 1884, furnished the first proof of the communicability of the disease by inoculation of rabbits with pus from a wound in a case of human tetanus. Nicolaier, in 1885, found disseminated in all kinds of earthy matter bacilli which, introduced subcutaneously into mice, guinea-pigs, and rabbits, produced typical trismus and tetanus with fatal termination. Rosenbach, in 1886, demonstrated the tetanus bacillus for the first time in man. Thus was established the generic relation to the diseases of the bacillus of Nicolaier. The poison appears to be in the ptomaines, a specific product of the tetanus bacillus. Kitasato observed that the filtrate, perfectly free from germs, produced the same tetanic effect. The ptomaines, such as tetanin and tetanotoxin, have been extracted from the culture of this bacillus, and it is probable that most of the symptoms of irritation of the nervous system are due to the presence of these substances. The bacillus is a short rod with an enlargement at

¹ Read before the Iowa State Veterinary Medical Association, at Des Moines, Sept. 9, 1895.

one end, due to sporulation, which gives it the characteristic drum-stick shape. Although it is found in the dust of the street, it rarely finds an opportunity to grow in the living tissues, owing to its anaërobic properties, hence the rarity of the disease. The bacilli are found principally in tissue near the wound as well as in the internal organs and blood.

It occurs in all animals, but is seen most often in the horse. It occurs most often in hot weather, during the prevalence of thunder-storms, indicating a superabundant amount of electricity in the air. It becomes enzoötic in such cases. Horses are more subject to it in damp, filthy, basement stables. This and another reason—namely, the effect of strychnine—go to prove that the disease is associated with some abnormal condition of the blood. It would seem that some particular state of the system is a necessary precursor of this malady. That tetanus may be produced through the blood is shown by the results of the administration of strychnine, which imitates the tetanic symptoms in a very striking manner, so that you may at will develop the phenomena of tetanus in an animal by giving him strychnine or injecting it into his blood, but you cannot cause it by external injury.

Tetanus is of two kinds—traumatic and idiopathic. When the muscles of face and neck are chiefly affected, resulting in persistent closure of the jaws, which is characterized as lock-jaw, it is spoken of as trismus; when the muscles of one side of the body are affected it is known as pleurothotonus; when the dorsal and upper cervical muscles are involved it is known as opisthotonus; when the muscles of belly are affected it is then called emprosthotonus; when the muscles of the whole animal are disturbed it is then known as orthotonos.

The traumatic form follows the infliction of wounds in from two to twenty days, rarely as late as thirty-five days. It may follow any wound, slight or severe, or various operations, as castration, docking, etc., but mostly follows badly treated or neglected wounds; most commonly follows wounds caused by a nail in the foot, or the wound occasioned by castration. Punctured wounds generally offer the best opportunity for the growth of the bacillus, and if such wounds are inflicted on parts of the body naturally coming in contact with dust and dirt, as the legs and feet, or if foreign bodies covered with dust or dirt, containing the bacilli, are lodged in the tissues, the condition favorable for infection is obtained.

The idiopathic form arises from unseen causes : exposure to extremes of climatic influence and to fatigue, especially among animals with insufficient food and improper sanitary conditions ; intestinal irritation, produced by indigestible material or parasites ; metritis following parturition. It may follow any slight disease, even overdriving or overheating in hot weather.

Symptomatology. From the outset to the very termination the symptoms may be said to be diagnostic. Take a typical case. The first thing you see is slight trismus ; grinding of the teeth ; a drawn condition of the muscles at the angles of the mouth ; increased flow of saliva secreted—may drop from mouth to the ground ; the superior cervical muscles contracted, elevating the head and causing the nose to become protruded. On entering the stall you will notice unnatural excitability. The horse is nervous. There will be twitching of the muscles of the face ; the eye will be drawn upward and backward into the orbit, showing the white of the eye and making it look smaller, and at the same time the membrana nictitans is drawn upward over the eye ; the limbs are forcibly extended and kept widely apart ; locomotion is difficult, and there is a peculiar straddling, stilty gait, with evident pain.

As the disease develops the aggravation of the symptoms is usually rapid. The spasms extend to all parts of the body ; the muscles over the body become rigid and hard to the touch, especially in the cervical, dorsal, and gluteal regions ; the tail is elevated and trembles, the nostrils dilated, and the ears stiff and pointed upward. The eye remains retracted in the orbit, and the membrana nictitans remains drawn upward over the eye. Respiration is accelerated ; flanks tucked ; there will be contraction of the abdominal muscles ; ribs drawn tightly, diminishing the size of chest ; the nose elevated and extended more ; will sweat very freely. The whole nervous system is in a state of tonic spasm, but spasms are more or less intermittent ; the relaxations are not very apparent while the exacerbations are. The horse in this condition is very sensitive to all noises and to the presence of other animals.

When the disease is fully developed and the jaws are locked there is inability to eat, and streams of ropy saliva hang from the mouth. The pulse at first is slightly hardened and also accelerated, but as the disease progresses becomes very hard, small, and weak, and continues more so as the disease advances. The desire for food and water generally remains good, and

bowels generally inactive. The horse persistently stands in bad cases. In mild cases they usually lie down, and get up alone. This is considered a favorable symptom. Sometimes, in cases not severe, horses will get up after the spasm has passed, and again they are unable to get up after once down. There is apparently terrible distress in the præcordium. Would describe it as of a painful, dragging nature, and no doubt dependent upon spasmodic contraction of the diaphragm. At this time excitement increases, and the animal dies from exhaustion, caused by tonic spasm of the muscles of the heart. Death takes place usually in from four to twenty days, or sooner even than four days; sometimes in forty-eight to sixty hours in very bad cases.

Prognosis. The idiopathic form usually terminates favorably. The traumatic, when occasionally of a mild character, and when all symptoms are not fully developed, and occupying in the passage through its various phases a rather lengthened period, has a favorable prognosis. In severe cases, which are characterized from the accession of the diagnostic symptoms of tonic muscular spasms to their full development by rapidly recurring exacerbations, febrile disturbance, high temperature, much restlessness and pain, the percentage of recoveries is exceedingly small, but still much depends upon the surroundings and nursing. If in these cases the patients live twenty days they generally recover, especially if the temperature of the body remains within normal limits. It must be remembered that an apparently favorable case sometimes takes a rapidly unfavorable turn and death ensues.

Treatment. Very many cases of tetanus we are called upon to treat are, from the outset, evidently hopeless. These rarely survive long enough to give any therapeutic agent an opportunity of acting upon the system. In all cases the first matter demanding attention is the hygienic treatment. It consists in placing the animal in a comfortable box-stall, with good ventilation, dry, dark, and perfectly quiet. It is best to keep the same attendant all the time; do not change. Keep away all visitors and spectators. Keep soft, sloppy mashes before him all the time. Would recommend placing the horse in a sling early. Clothe the animal according to the time of the year. Avoid all noisy demonstrations. Sudden flashing of a light in a previously darkened stable, hurriedly and roughly opening a door, a sudden attempt to take hold of the animal, or talking

loudly, are sufficient to excite the animal and retard its recovery.

Medical Treatment: Unless the bowels are already in a lax state, a moderate dose of aloes should be given early. Antispasmodics and anodynes are indicated; dilute prussic acid, ext. belladonna, calabar bean, sulphate of morphine, chloral hydrate, the bromides, fluid-extract lobelia, ext. physostigmin, have all in turn been tried with varied results. The various remedies may be given with syringe per mouth, rectum, or hypodermatically, according to the severity of the case. The solid extract of belladonna is best smeared on the teeth and the horse allowed to suck it. Sometimes the medicine may be given in mashes, as appetite often remains good. If the case is one of traumatic tetanus, the wound ought to be carefully examined, and all foreign matter or animal tissue which, from necrosis, is acting as an irritant removed, then apply a hot, soft, linseed poultice, medicated with carbolic acid, so as to let the poultice come into contact with the wound. Dress the wound twice a day. Extract of belladonna is recommended to be smeared over the wound in whatever region it may be located.

I think electro-therapy ought to receive more attention among veterinarians than it does in the treatment of nervous diseases. For my own part, I can speak very highly of its application in the treatment of tetanus. It may be a matter of mere chance or luck, so-called; but, anyway, success seemed to follow its use. During the time elapsing between May 4 and 22, 1894, I had ten cases of traumatic tetanus, six occurring in one week and all following the operation of emasculation. Eight of the ten cases recovered. Five out of six cases treated by electricity recovered, and three out of four treated otherwise. Six cases were in the city, and four were several miles in the country. The six cases were all in the hospital, where treatment with the battery was comparatively easy. The machine being roughly constructed by a local electrician, and not being portable, I could not use it on cases in the country. These cases, with the exception of one, were very mild, and yielded readily to medicinal remedies. The six cases at the hospital were apparently aggravated. The battery used was a faradic battery similar in construction to a McIntosh twelve-cell faradic battery, with sponge electrodes; the current instead of coming directly from the battery-cells passes through an induction-coil.

I must confess that I am not very well versed in electrical

appliances, or in knowledge of electricity, as the above was a matter of experiment with me; but thinking that it might prove beneficial to the profession at large, I bring it before you. Eight cells out of the twelve were sufficient for producing a current strong enough in the cases I treated, as they were under two years of age. I found by using more there would be spasmodic contraction of the group of muscles where the electrodes were applied; in one case sufficient to throw the animal down. Under the direct use of eight cells the horse at first showed signs of excitement, but after three or four applications, one day apart, would take the treatment with no visible excitement. After the second day could see improvement in various symptoms. Continued treatment in all cases eight to fourteen days, with complete recovery. I used general faradization. One electrode, usually the positive, is placed either at the base of the tail or in whatever region may suggest itself to the operator, and the other negative electrode moved over the body.

Another form of treatment is with tetanus antitoxin, which ought to be used more extensively than it is, being comparatively new as yet, but still not without its friends. Numerous cases have been cured in the human family by the aid of this remedy, principally in foreign countries. Only once has it been tried in America, and that at Amsterdam, N. Y., by Dr. C. F. Timmerman, in a man, nineteen years of age, having the disease, with complete recovery.

In a recent letter from Dr. Paul Gibier, of the Pasteur Institute, New York City, he informed me that he personally knows of several cases being cured by its use in the horse.

Anatomical characters. A casual examination reveals nothing wrong, but on a close examination by the aid of the microscope you will find congestion of the neurilemma (or covering of the nerves) leading to and from the wound, the bloodvessels of the spinal cord engorged, and usually effusion in the subarachnoid space. The blood, as well as the tissue in the immediate vicinity of the wound, will be found in some cases crowded with minute organisms, known as tetanus bacilli.

Dr. R. S. Huidekoper will deliver two lectures a month until May next to the Master Horseshoers' Association of New York City.

REPORTS OF CASES.

A CASE OF TETANUS CURED WITH ANTITOXIN.

BY GEORGE JOBSON, V.S.,
OIL CITY, PA.

THE curative treatment by means of antitoxin, although confined as yet to a limited number of diseases, opens a field whose limits we cannot yet define; and many diseases which are now looked upon as fatal may, in the near future, be cured by this form of treatment.

The discovery of tetanus antitoxin is one of the most recent and valuable additions to the list, and it is the only known remedy at present that can be relied upon to cure this generally fatal disease. Before proceeding with a description of the case referred to above, I will give a brief outline of the etiology of the disease, so that we may better understand the action of the remedy.

Tetanus is a germ disease which attacks most all species of domestic animals and man, and is characterized by spasmodic convulsions of the muscles, which before attacking the entire apparatus generally begin in a limited number; as, for instance, when the face muscles are affected and the jaws become locked it is called lockjaw. Later, the entire apparatus is invaded and the body becomes rigid—a condition which is brought about by the entrance of germs into the system, and the formation by them of poisons called toxins. That tetanus occurs spontaneously has very few supporters at present, as it is necessary to have the presence of the toxin before the disease is produced, and the germ which produces it may gain entrance to the system by the slightest kind of a wound. The bacillus of tetanus is an anaërobic germ, *i. e.*, one which cannot live in the presence of the atmosphere, as the oxygen which it contains is destructive to it. The germ is widely diffused to all parts of the earth, and occurs in manure, rich garden earth, and, in fact, anywhere the air does not penetrate. It is said its presence has been revealed in the intestines of herbivora, and this may be an explanation of the cause of the so-called cases of idiopathic tetanus, the enemy gaining entrance by means of a wound in the intestinal wall.

When the tissues are bruised and torn their vitality is lessened and a condition exists which is favorable to the growth of the bacillus; but should the wound be clean-cut and deep, and the arterial blood flow freely, the conditions are not so favorable, as the oxygen contained in the blood tends to destroy the germs, and the healthy tissue surrounding the wound sends forth its hosts of migratory cells to combat the enemy. When the bacilli find a medium suitable for their growth they secrete a poison or toxin, which is the element that causes the symptomatic muscular contractions. The bacillus does not then cause the tetanic convulsions, except in an indirect manner; that is, by the production of the poison or toxin, which acts as an irritant. If the system possesses sufficient vitality to resist the action of the toxin for a length of time, a material called antitoxin is formed by it, which neutralizes the action of the former. If, then, we supply the system with antitoxin, we fortify it with the material it craves to combat the germ poison, so that by the use of prepared antitoxin we can supply it in several days with a material which it requires months to form, granted it can resist the action of the virulent poison of the germs so long.

The case about to be described is not cited simply because the animal recovered, as I have had several cases recover by medicinal treatment alone, but because the effects of the material were almost immediate, while by the old methods it required months sometimes to produce the same results:

CASE. A chestnut pony gelding, used in a grocery wagon, received a wound in the neck from a rusty nail sticking out of a board in the stall. In about nine days afterward the man in charge noticed a slight stiffness during locomotion, but it was not thought serious, and the animal was kept at work until the next day (October 29th), when he was brought to the office and a diagnosis of incipient tetanus was made, and it was advised to have the animal unhitched and removed to his stall. Nerve-sedatives and antispasmodics were given, but the animal grew steadily worse, and on November 3d it was a well-marked case of tetanus. The muscles of the trunk and limbs were now stiff, but trismus had not as yet occurred, and with assistance the animal was able to rise when down.

Having read an article by Paul Gibier, M.D., of the Pasteur Institute, on the treatment of this disease in man by the use of antitoxin, I suggested to the owner that we send for a sufficient

quantity to give it a fair trial, if it did not cost too much, and he consented. Before the arrival of the antitoxin, on the morning of November 7th, the horse was found lying in the stall, unable to rise. Slings were put under him, and, on being raised to his feet, he was able to stand. The entire muscular system was stiff and the jaws locked. Respiration was rapid and conducted with much difficulty. The slightest disturbance would bring on spasms, and it looked doubtful if the horse would live any length of time. On November 9th a supply of antitoxin sufficient for three injections was received from the Pasteur Institute, and at 4.15 P.M., assisted by my father and S. Foster, M.D., the first injection was made. The hair being first shaved from portions of the neck, the parts were washed with a solution of carbolic acid, and the antitoxin was injected hypodermically. The pulse at that time was 44, temperature 100.6°, and respirations 72. The wound was washed with iodine 1, potassium iodide 2, and water 100 parts. When the second injection was given, next morning, the respiration had dropped to 55 per minute, pulse 40, and the temperature had risen to 101.6°. Improvement in the condition of the muscles of the body and limbs was general, while the muscles of the neck and jaws were decidedly improved, the neck being moved from side to side, instead of being held in a straight line as previously. On November 11th the third injection was made, and a further improvement was visible, the respiration being 52, pulse 40, and temperature 101.4°. The muscles of the jaws could be freely used in masticating. Improvement continued steadily until six days after, when he was taken out of the slings and walked around the yard. Recovery is now complete, and, with the exception of being slightly emaciated, the animal looks none the worse for the attack.

THE INFLUENCE OF FEVER ON A CASE OF TRAUMATIC TETANUS.

BY A. S. WHEELER, V.M.D.,
NEW ORLEANS, LA.

On April 10, 1895, I was called to see a five-year-old mule that was suffering from tetanus, caused by a nail-wound of three days' duration. From the day of my first visit the case grew

steadily worse, until the seventh (April 17th) day, whereupon I told the owner that there was but the slimmest chance for the animal; the jaws were almost immovable, and the poor beast was scarcely able to stand from the tension of the abductors. I had him placed on slings and made as comfortable as possible, leaving instructions to notify me by telephone the next morning if the mule died during the night. Having received no message the next morning, I went to see the patient again, and to my astonishment found him better as to the tetanus, but a slight cough and fever (102°) had sprung up. On the following day the temperature reached 104° – 105° ; the jaws were still more relaxed, and there was at this time considerable discharge from both nostrils, as if a distemper was supervening. In spite of the reduction of the febrile symptoms with antipyretics and inhalations of carbolized vapor, gangrene of the lungs developed, and the animal succumbed on April 26th from septicæmia. Every vestige of tetanus had disappeared several days before death.

The soothing influence of fever on nervous diseases has often been recognized, especially in insanity, and the laxative effect of pyrexia in the case I have just cited was almost magical.

Prof. James Law, of Cornell University, was a visitor to Philadelphia, inspecting the Veterinary Department of the University of Pennsylvania and the Philadelphia Veterinary Sanatorium, in order to combine in the new school buildings of the New York State Veterinary College all the best features known in the construction of such institutions.

Prof. R. S. Huidekoper, of New York City, is entertaining a proposition to assume the directorship of a very large breeding and stock-raising enterprise in Virginia. Besides aiming to produce fine stock of several species and breeds, attention being given also to poultry, etc., the undertaking has in view the production of high grades of flesh and fowl for the table and food-markets. The enormous consumption of these products, associated with the movement, will allow for a constant weeding out of inferior specimens for breeding purposes and thus enable the projectors to rapidly attain the highest state of perfection, with profit on both ends.

EXTRACTS FROM FOREIGN JOURNALS.

THERAPEUTICS OF SERUM AGAINST TETANUS. It has been established that the serum of animals which have been inoculated against tetanus and diphtheria has at the same time a preventive and a curative effect, and can be used as well for preventive inoculations as for treatment of the disease. In the case of tetanus the desired immunity takes place immediately after the injection of the serum, the period of immunity lasting from two to four weeks. The cure is the surer the earlier the injection takes place after the artificial transference of the specific microbes, respectively, of the poisons secreted by them. If, however, the injection is made after the natural rigidity (or spasm accompanied by rigidity) has set in, there arises a very serious condition. Although it is possible, in the case of diphtheria, to take the disease in hand at the beginning of its development which precedes poisoning, this is not possible in tetanus, because visible symptoms of the disease do not appear until several days after actual poisoning has set in; and in this state, *i. e.*, when tetanus is no longer to be mistaken, an injection of serum proves to be wholly without effect. Since, then, serum affords no relief after tetanus has broken out in its natural way, it is only possible to use it as a means of prevention. Veterinarians who practise in neighborhoods where tetanus is frequent might often do well, after accidental injuries or operations, to make two injections of serum within fourteen days, merely as a preventive. They could then feel assured that the animal which had been injured or operated upon would not certainly within six to eight weeks fall a prey to tetanus. The injection can be made at the arch of the neck or behind the shoulder-blade. The serum which Nocard dispenses retains its effectiveness for at least six months, provided the phial is not exposed to light or heat and is not opened until the injection is to be made.—*Excerpt from an article by Nocard in the Recueil de Méd., reprinted in the Theirärsiliches Centralblatt, November 15, 1895.*

THE SPREAD OF DIPHTHERIA BY HOUSE CATS. The *British Medical Journal* contains the following highly interesting state-

ment: "At the last diphtheria epidemic in Brighton, all the cases occurred in Elm, Grove, and Southover Streets. Everything pointed to the fact that some local cause must be present here. Grown people as well as children were afflicted with the disease. The milk could not be the cause, because the patients had obtained that commodity from several different sources; in like manner the drainage in the houses under consideration was of the best, but in every house the house cat had been sick. The disease of the cats consisted in very severe coughing, excretion at the nose, difficulty in swallowing, and emaciation. Further investigation showed that more than one cat in the streets afflicted with diphtheria had suffered from the same disease. The authorities of Brighton felt sure that the cats had transmitted the disease to human beings, and warned the public against them, with the result that further spreading of the disease was prevented."—*Thierärztliches Centralblatt*, November 15, 1895.

RESULT OF PASTEUR INOCULATIONS. In regard to the value of Pasteur inoculations, the following statistics, which are taken from a report of the Pasteur laboratory in Stuttgart, give definite information. The Institute dispensed in the year 1894, the first of its existence in Germany, vaccine matter against erysipelas (swine-plague) for 7847 sucking pigs; against anthrax (*morbus carbuncularis*, charbon, malignant pustule, splenic fever), for 2200 sheep, 2215 cattle, and 4 horses—in all for 12,266 animals. According to the investigations made, the mean death-rate in the different classes before inoculation was, for sucking pigs, 30 to 40 per cent.; for sheep, 20 to 25 per cent.; and for cattle, 10 to 20 per cent. These figures sank, as a result of inoculation, to 0.57 per cent. for sucking pigs, 0.38 per cent. for sheep, and 0.05 per cent. for cattle.—*Wiener Zeitung* (*Vienna News*).

THE SIXTH INTERNATIONAL VETERINARY CONGRESS IN BERNE. From the very first, the most favorable prognosis had to be made for the Sixth International Veterinary Congress in Berne, since not alone the most important veterinary questions were proposed for discussion, but the very choice of the place itself was not of the least importance for attendance upon the assembly. Accordingly the number of announcements (from those who proposed to attend) was nearly 700, about half of which,

to be sure, came from Switzerland. Germany stood next with 77; Roumania with 64, and France with 55, followed in order. The numbers for the remaining states were: Belgium, 24; Austro-Hungary, 19; Russia, 12; Holland, 12; Italy, 11; England, 4; Denmark, Sweden, Norway, Luxemburg, Greece, Spain, Portugal, America, India, Japan, and Egypt, 1 to 2. The actual number of participants amounted approximately to 300, of whom 256 entered their names in the list of those present.

Corresponding to this important numerical factor, the assembly was in quality very brilliant; in a word, it united a larger number of important men than has ever been seen at a veterinary congress. We must content ourselves here with a mere statement of this fact, because an enumeration of the individual names would far exceed the limits of this article. It is incumbent upon us, however, to remark that the Swiss Federation and canton government were represented by several gentlemen and by the college of professors in the Berne school in full number. The thanks of all present are due to all these gentlemen for the zeal with which they made all the preparations, for the trouble which it cost them, and for the friendly spirit with which they performed the various services.

The Congress had a decided international character, although the German and French were in a preponderating majority. For this reason the proceedings were carried on in German and French. Only a few of the speakers made use of both languages, and the most of the speeches were therefore translated by two interpreters into the other language. This was done with praiseworthy zeal and great dexterity, the only criticism being that, in consideration of the fulness of the programme and the lack of time, a brevity was often imposed upon the interpreters which was not always conducive to a thorough understanding.

The assembly, up to the time of organization, was presided over by the representative of the Swiss federal government—bundesrath—(federal counsellor), Med. Dr. Deutscher. The first speaker was Colonel Potterat, chief of the Swiss veterinary military officer corps. After him Dr. Deutscher, in a long speech which was frequently interrupted by applause, welcomed the assembly and declared in the name of the government that the latter was following all the proceedings with great interest.

Thereupon followed the election of a president. According to the suggestion of Potterat, Chairman of the Committee on Organization, a different president was chosen for each day, and the following men received that honor: Chauveau (France), Lydtin (Germany), von Raupach (Russia), Hutyra (Hungary), Berdez (Switzerland), Müller (Germany); as vice-presidents (two for each day) were chosen: Degive (Belgium), Hirzel (Switzerland), Nocard (France), Perroncito (Italy), Bang (Denmark), Wirtz (Holland), Siegen (Luxemburg), Vasilescu (Roumania), Siedamgrotzky (Germany), Arloing (France), Sperk (Austria), and Cope (England).

The Congress elected as honorary members: Robert Koch (Berlin), Pasteur (Paris), and Röhl (Gratz), and these gentlemen telegraphed their thanks for the honor. Noyer (Berne) was elected General Secretary, whereupon Chauveau, amid lively applause, assumed direction of the proceedings, which were opened with a report by Professor Hutyra on the best means of securing international veterinary police regulations. Berdez, Degive, and Perroncito reported on the same subject, and in the debate which followed Raupach, Degive, Leblanc, Lydtin, Berdez, and Nogneura took part. The views in regard to the possibility and result of such regulations differed widely, and the opinion was several times expressed that the discussion of the question could be of little practical worth on account of the fact that there was positively no hope that such measures could be carried through. In spite of this, however, the following resolutions were passed, although it must be said that a part of the assembly refrained from voting:

"*a.* The Congress recommends the establishment of an international service for collecting statistics in regard to diseases and the publication of an international bulletin for diseases.

"*b.* The Congress resolves to present a petition to the Swiss federative government that it take the initiative in calling together an international conference with a view toward securing a convention to consider the cattle-traffic."

On the second day, with Lydtin as presiding officer, the inoculation of mallein was discussed, and Nocard, Schindelka, Foth, and Heyne presented papers. The debate was very lively, and, in consideration of the importance of the subject, extraordinarily interesting. Professor Schindelka vividly described his well-known opinion, which he had arrived at through a long list of experiments. Foth did not differ essentially from him, but

made reference to the opposite relation between the temperature of the body at the time of injection and the highest temperature after it. He referred, further, to the necessity of repeated injections and to the need of more extended experiments at the expense of the State. The present unsuccessful results with the mallein reaction are, in his opinion, worthy of consideration. Nocard declared with the approbation of his countrymen that the mallein question had been settled, and that, according to his experiments, mallein is beyond all doubt a sure diagnostic agent. Müller (Prussia) dissented absolutely from this view on the grounds of statistical data. Grünwald (Moscow), Locusteano, Pilarios (Athens), Leblanc, McFadyean (London), Nogneura (Lisbon), Trasbot (Alfort), Hinze (Hague), Lanzilotti (Milan), Stubbe (Brussels), and Degive spoke further on the same subject, whereupon the following resolution was passed with a small majority, thirty-nine voting against:

"*a.* Mallein is a powerful means of securing a diagnosis of equine glanders in cases suspected of this disease.

"*b.* The systematic use of mallein in herds which are affected with glanders is the surest means of rooting out the disease."

In spite of this, however, a motion of Foch's, which found great favor in the eyes of the less enthusiastic advocates of mallein (Chauveau, Leblanc, Arlonig, Müller), was carried without opposition:

"The different governments are requested to place means at the disposition of veterinarians in order, by means of experiments which will be free from criticism, to settle the question finally in regard to the worth of mallein injections as a regulation of the veterinary police, it being recommended that a number of horses be artificially infected with 'malleus humidus' and treated with mallein."

The debate about tuberculin as a diagnostic, in which Bang (Denmark) gave the first report, was no less interesting. Bang is a warm advocate of tuberculin-inoculation, and holds that the battle against tuberculosis will last for many years, but, nevertheless, in the end lead to victory. Hess and Guillebeau are less enthusiastic in regard to the tuberculin reaction and hold the not uncommon view that miliary tuberculosis can arise through injection of tuberculin. After a rather warm debate, in which many speakers took part, a motion of Bang and Nocard, which runs as follows, was carried:

"Tuberculin is a very valuable diagnostic and can be of the

greatest service in the fight against tuberculosis. There is no ground for warring against its general use for fear of its aggravating the disease already present." (Ninety-eight votes for it.)

In like manner a separate motion of Nocard's was carried, which was as follows:

"The Congress utters the wish that the governments may provide for the use of tuberculin in the herds where tuberculosis is found." (Seventy-three votes for it.)

The following motions were lost:

"Tuberculin is a valuable diagnostic agent. The Congress recommends the method of fighting tuberculosis which has been applied in Denmark." (Arloing, Perrencito for.)

"The Sixth International Veterinary Congress recognizes tuberculin as the best means at present of recognizing tuberculosis, and consequently as the best means of fighting the disease. It expresses the wish that the use of tuberculin by the veterinary police of the different States be regulated by law." (Butel for.)

"The Sixth International Veterinary Congress takes cognizance of the attempts of Denmark to fight cattle-tuberculosis, which have been carried on with great knowledge and accompanied by the best results by the application of tuberculin, and asks the federative council of Switzerland to communicate the action of this assembly in regard to the subject to all governments, and to recommend the general application of the Danish method to a thorough trial." (Feser for it.)

At the third session, September 18th, Raupach presided. Strebel and Hess brought in reports in regard to inoculation for symptomatic anthrax, whereupon a motion of Kitts was passed:

"The Veterinary Congress considers the preventive inoculation for symptomatic anthrax, which has been discovered by Arloing, Cornevin, and Thomas, as a very valuable prophylactic means for reducing the number of cases of symptomatic anthrax, which appears very feasible under the circumstances, that provision be made for indemnifying losses through cases of this disease."—*Thierärzt Centralblatt*, October 15, 1895.

NUMBER OF PUBLIC SLAUGHTER-HOUSES IN THE KINGDOM OF PRUSSIA. On the 31st of March, 1894, there were in existence public slaughter-houses in the following districts: Königsberg, 18; Gurnbeinen, 13; Dantzic, 4; Marienwerder, 16; Berlin, 1; Potsdam, 9; Frankfurt (on the Oder), 8; Stettin, 5; Köshn, 8;

Stralsund, 4; Posen, 16; Bromberg, 14; Breslau, 16; Liegnitz, 14; Oppeln, 20; Magdeburg, 6; Meiseburg, 6; Erfurt, 2; Schleswig, 1; Hanover, 1; Hildesheim, 6; Lüneburg, 3; Osnabruck, 2; Aurich, 2; Münster, 6; Minden, 7; Arrisberg, 19; Cassel, 11; Wiesbaden, 4; Koblenz, 5; Düsseldorf, 15; Cologne, 5; Treves, 5; Archen, 3; and Sigmaringen, 2. In all 35 districts and 277 slaughter-houses.—*Thierärzts Centralblatt*, October 1, 1895.

THE QUESTION OF THE INTRODUCTION OF COMPULSORY MEAT-INSPECTION AND THE INSURANCE OF CATTLE BY THE STATE IN GERMANY. The suggestion of the Chamber of Commerce in Zettan to the Bundesrath (Federative councilman), that the compulsory inspection of meat should be demanded for the whole Empire, has been the cause of a closer consideration of this question in Munich. The committeeman, Heiler (to whom the question was referred), holds that a satisfactory meat-inspection is only possible if the importation of slaughtered animals from abroad is prohibited. In the year 1894 a fifth of all the meat sold in Berlin is said to have been imported from abroad, and in other cities, such as Leipzig, the same is the case. Meat which is imported from abroad cannot be satisfactorily examined. Meat-inspection in foreign lands cannot be carefully criticised, and therefore forms no adequate equivalent for inspection at home. Imported meat which is on sale in the home market, in spite of inspection, does not offer the guarantees that cattle do which are killed in slaughter-houses under veterinary inspection. Therefore, the importation of living animals should be permitted free of duty, or at least no very great obstacles should be put in its way. The committeeman thought it best that the individual States should each for itself regulate the meat-inspection. At present, even in States where meat-inspection is practised, there is a great lack, especially in the country, of meat inspectors who are competent to perform their duties with intelligence. The recommendation of compulsory cattle-insurance by the state was also passed by the Munich Chamber of Commerce on the recommendation of Heiler.—*Thierärzts Centralblatt*, October 1, 1895.

THE APOTHECARIES AGAINST THE VETERINARIANS' RIGHT TO DISPENSE DRUGS. Once more the question of the liberty of the veterinarians to dispense medicines has been brought upon the carpet by certain apothecaries, who imagine that their business is injured by it. First, an apothecary, Schlegel, in Haida,

brought a motion before the annual meeting of the Bohemian Society of Apothecaries to prohibit (if possible, by legal measures) homœopathic physicians and veterinary surgeons from dispensing medicine, and later Apothecary Janota, of Falkenau, brought the same motion before the general assembly of the Austrian Pharmaceutical Society in Karlsbad. Naturally Janota's motion was supported by Schlegel, and it was carried by a large majority.—*Thierärztl. Centralblatt*, October 1, 1895.

REGULATION OF THE DISTRICT GOVERNMENT IN REGARD TO THE CONSUMPTION OF MEAT AND FAT WHICH STICKS TO GREEN HIDES. In regard to the circumstance that this hide-meat, partly on account of its origin and partly on account of the qualities which it gets through transportation and storage, is at least of very doubtful character for the health of the community, the government found it necessary to make the following law :

The use of this hide-meat or of the fleshy and fatty parts which stick to green hides is prohibited, either as food for human consumption or for the feeding of domestic animals, from the time that the hides are brought from the slaughter-houses to the tanneries or become in general an article of merchandise. Offences against the law are punished by a fine of from 1 to 100 florins or with arrest and imprisonment from six hours to fourteen days.—*Thierärztl. Centralblatt*, October 1, 1895.

THE APPLICABILITY OF BARIUM CHLORIDE IN THE TREATMENT OF COLIC IN THE HORSE. We take the liberty of offering some communications on the action of chlorobarium which are taken from articles by Professor Dieckerhoff in Nos. 23, 24, 27, and 29 of the *Berliner Thierärztlichen Wochenschrift*, 1895 (*Berlin Veterinary Weekly*):

"Exceedingly interesting is the manner in which Dieckerhoff learned of the action of this medicine. Two horses which were used for hauling coal from one of the depots in Berlin were left standing before a freight car which had shortly before been unloaded. In this car was a salty mass which the horses licked up. In the course of half an hour when the horses had returned from the depot they were both taken sick with colic, which took an uncommonly severe and peculiar course, accompanied by violent diarrhœa, ending fatally in the first case within an hour, in the second within fourteen hours.

"The veterinary surgeon called to treat the cases, on account of the peculiar symptoms, called in Professor Dieckerhoff, who

held a post-mortem examination. He found in the stomachs a moderate quantity of food-matter. The small and large intestines, however (the mucous membrane of which was of a gray color and in places, particularly at the folds, inflamed and swollen), were completely empty and looked as if they had been washed out. The muscles of the heart appeared parenchymatously degenerated and contained a moderate quantity of tar-like, slightly coagulated blood; no other changes worthy of mention were noticeable. A chemical analysis showed a relatively large quantity of barium chloride in the contents of the stomach. The salts, also, which were afterward taken from the freight car mentioned above proved to be chlorobarium. It was then clear that this matter had brought about fatal poisoning in the two horses and had in each case exercised an uncommonly powerful action on the peristaltic action of the stomach.

"With this observation as a starting-point, Dieckerhoff made several searching experiments, the results of which are given below. This medicine given through the mouth in doses of from 2 to 6 g. had no visible effect upon a horse; after doses of 12 g. the horses showed symptoms of a light colic, and after thirty to forty-five minutes copious evacuations followed, which consisted at first of pulpy and later of fluid excrement. These evacuations were accomplished by a violent pressure, so to speak, and from the acid odor of and the undigested condition of the pulpy food-stuff there could be no doubt that the contents of the small intestine also had been eliminated. The same horses showed an unpleasant sensation of taste after the administration of barium chloride.

"The effect of chlorobarium which has just been described Dieckerhoff witnessed further in horses which were suffering from colic caused by overfeeding with corn and peas; restlessness in the animal always increased, but after twenty-five or thirty minutes a rich evacuation of excrement followed, and after several hours the horse could be left as cured of colic. A much more precise effect and in the space of two to three minutes is obtained through intravenous administration in doses from 1.0 to 1.5 g., and shows itself in that contraction of the lips, which indicates an unpleasant sensation of taste, in the raising of the tail, in colicky symptoms, and in copious evacuation of excrement. In larger doses it causes continuous cramp-like contractions of the intestines and severe diarrhoea, and soon becomes, on account of its inhibitory influence on the spinal cord, a deadly poison.

“Subcutaneous application does not bring the wished-for action in the peristalsis of the intestines, and is also dangerous for the reason that at the place of injection mortification of the skin sets in.

“Cattle can stand chlorobarium up to 40 g. through the mouth, and 3 g. intravenously without any special effect. Sheep died after an administration of 6 g., showing lameness and diarrhoetic evacuations.

“Chlorobarium dissolves in $2\frac{1}{2}$ parts of cold and $1\frac{1}{2}$ parts of boiling water. The same can be applied in doses of from 5 to 12 g. in solution, or with pulv. natr. chlor. 100, pulv. rad. althæ 40, and aqua destill. q. s. in electuarium or in bolus form, and finally for intravenous injection in doses of 0.5 to 1.25 g. dissolved in 10 g. aqua destill.

“However, the combination of barium chloride with sulphuric acid salts is always to be avoided, because the insoluble and useless barium sulphate is formed; natrium sulphate is therefore to be used as antidote in case of intoxication by barium chloride. Dieckerhoff prefers the intravenous injection on account of the immediate action of the drug. The dose, however, should never be repeated within twelve hours. The application of an intravenous injection, after which the animal should be exercised for a half-hour on account of the increasing restlessness, is, according to Dieckerhoff, a comparatively easy matter, and, by observing the necessary foresight, an operation without danger, which the practical veterinarian can perform just as easily as a subcutaneous injection.

“Dieckerhoff emphasizes the fact that the wise administration of barium chloride is of the highest importance if no circumstances are present which endanger the life of the animal. Of course, here the size and weight of the animal, together with his age and physical condition, are to be taken into consideration. Small and light animals, or old and emaciated ones, should be given only small doses. Especially if there is heart weakness in the animal (over seventy beats in the minute), only a very small dose—from 0.3 to 0.75 g.—dare be given.

“Chlorobarium is a deadly poison for human beings, and must be handled with great caution.

“Finally, we should mention that a syringe (capable of holding 20 g.), two canulas, and five small glasses for chlorobarium à 0.50, 0.75, and 1 g., have been prepared by the instrument manufacturer Hauptner, in Berlin, N. W., for intravenous chlorobarium injections.”

EDITORIAL.

"JOURNAL" CHANGE.

WITH the December number Dr. W. A. Conklin severed his connection with the JOURNAL. Long identified with its publication, he was a liberal giver to the veterinary profession, and spent several thousands of dollars in the early history of the JOURNAL to make it worthy of a place among scientific publications. His pen for many years was kept busy in the interest of a higher education for the veterinarian, and the early history of this publication owes largely its sustenance to his indefatigable labors. Other interests the past few years have demanded his whole time and attention, and the greater needs of journalism to-day made greater the demands upon his time and money than he could well give. We will not be without his advice and aid when needed in the better direction of JOURNAL affairs, and from time to time we shall hope to have his pen wielded for the benefit of our readers.

BUFFALO WINS FOR 1896.

BUFFALO, the Queen City of the Lakes, wins the place of meeting of the United States Veterinary Medical Association for this year, and we are sure that all will now yield, in that the votes have been cast, that this city deserved to be a winner, and we prophesy, early as it may be, that this will prove to be one of the memorable meetings in the history of the national organization. Tapping as a great railroad centre a tier of Northern, Eastern, and Central States, at whose centre, radiating at Buffalo, the Association has never met before, it will prove one of the largest meetings ever held by the parent Association of our land. As a concession to that large number of strong Association men in Northern New York, it will be appreciated with a warmth that will only be equalled by the zealous, untiring efforts of these fellow-colleagues to make this meeting a greater success than any of its predecessors. A beautiful city for a convention in September, one of the greatest live-stock centres in our land,

surrounded by some of the most renowned stock-breeding farms in the world; within a few minutes' ride of that great natural wonder, Niagara Falls, with splendid railroad facilities in all directions, all of which will add to the success of the meeting. Best of all, every member of the profession—North, East, South, and West—will receive there the most hospitable welcome, the most zealous attention, and fraternal feeling will be greatly strengthened by the cordiality of the Buffalo veterinarians. But one more point will be added at this time, and that is to say to the members of our organization that it becomes their duty now to prepare plans for being present at the convention of 1896.

RANK FOR OUR ARMY VETERINARIANS.

In this number we print a copy of the bill introduced in Congress for the recognition of the veterinarian. In addition, the names of the committee representing the United States Veterinary Medical Association and lists of the Committees on Military Affairs in the Senate and House. The time has gone by for discussion of the merits of this question; its failure in the past, no matter from what cause or causes, remains to-day a blot on the escutcheon of our profession, an open point of attack for just criticism of our government in military affairs, when compared with that of every intelligent, progressive nation of the world; a misfortune to our people, in that they are denied the widespread benefits to be derived by every step higher they raise one of the most important sciences on earth. A delusive form of economy, by which our government is denied the highest and most intelligent aid in this service, where so much might be saved in a monetary sense were rank and with it a wider latitude for the exercise of a greater degree of intelligent selection and purchase conceded, to those only who are fitted to render well these services.

Since the last effort to obtain this recognition failed, State after State has enacted laws looking to the greater safeguards always to be obtained by a higher degree of intelligence upon the part of her servants and boards for the selection of better-equipped men have been created. Boards for the keener exercise of vigilance in saving our people from the dangers of an impure food-supply, local and State, engrafted upon many sec-

tions of our country, all of which betoken the spirit of the age—advancement.

The committee who have taken this bill in charge, while created by the powers of the National Association, are well known and thoroughly representative professional men in every way, and stand ready, willing, determined, to fully represent the entire profession in zealous work to accomplish this much-to-be-desired end. Already in harness, they have made the first stroke a telling one, and won for the bill the friendly influences of those who are charged with the keeping of these affairs for our people. But this is not enough; they must have back of them the entire profession of the country, and we call upon every member to aid them by using their influence with those who represent them in either branch of Congress. Letters, personal interviews, are all to be used and put into force at once, not next week, next month, but to-day, and in such language that these servants of the people will understand that you are alive to the needs of your adopted calling, and are not afraid to advocate them when you know that the greater benefits are to be derived by those who receive these services. The need of the hour is work, and the call has gone forth; everyone has his influence; let it be wielded.

TO OUR READERS.

ONE of the leading features for 1896 will be a monthly abstract of all the leading features of the German veterinary periodicals. Arrangements have been completed for this work with one of the leading German instructors in this country. In addition our corps of contributors will enable us to give to our readers choice extracts from a number of other foreign journals. Our list of over one hundred contributors to the JOURNAL in 1895 will be doubled in 1896. Other special features of the JOURNAL will be shortly announced, and our constant aim will be to lead veterinary journalism in America.

We beg the indulgence of many of our contributors this month, in that we have been forced to lay over until February an unusually large amount of interesting material with which we have kindly been favored. We have for nearly six months added to each issue from ten to twenty extra pages of reading material and crowded our pages to the utmost they would hold,

but so generously have the efforts of the JOURNAL been seconded by its rapidly enlarging corps of contributors that we feel this explanation is again due those whose contributions have not as yet been published.

APPOINTMENT OF STATE VETERINARIAN FOR PENNSYLVANIA.

GOVERNOR HASTINGS, of Pennsylvania, on January 1st announced the appointment of Prof. Leonard Pearson as State Veterinarian at a salary of twenty-five hundred dollars per year. This appointment completes for the Keystone State the establishment of the State Veterinary Sanitary Board, and will inaugurate the work in Pennsylvania on a broad, conservative scale of dealing with infectious and contagious diseases among live stock. The appointment, after so long a wait, will be gratefully appreciated as a very acceptable New Year's gift by the veterinary profession of Pennsylvania. Well merited by virtue of peculiar abilities, training, and experience; broad-gauged and conservative, a thoroughly professional man, the State gains by this recognition one of the best-equipped men in our country, and Pennsylvania will now be found among the foremost commonwealths in preserving to our people her great live-stock interests and protecting them from the dangers that surround the meat- and milk-supply.

OBITUARY.—Dr. W. U. Custer, of Reading, Pa., died suddenly in his office on the evening of December 1st, at the age of sixty-five.

Dr. Custer was not a graduate of any college, but had followed his calling faithfully for more than a score of years and won for himself the good-will and appreciation of the community in which he lived. He was a member of the Pennsylvania State Veterinary Medical Association, and one of its most earnest supporters and regular attendants.

MARRIED.—On Wednesday, December 11, 1895, by the Rev. S. A. Zeigenfuss, Dr. Adwam W. Ormiston to Miss Carrie Atkins Wilson, both of Germantown, Philadelphia.

LEGISLATION IN MARYLAND.

EDITOR JOURNAL OF COMPARATIVE MEDICINE.

DEAR SIR: The case of State of Maryland *vs.* J. C. Sigmund, practising as a veterinary surgeon without a license from the board, was decided in favor of the prosecution, thus establishing the constitutionality of the law. Dr. Sigmund had a diploma, but the diploma was issued by a school after January 1, 1895, which required but two years' course of study. The Maryland law requires three years' study and the passing of a satisfactory examination.

Yours truly,

A. W. CLEMENT,

Secretary.

REVIEWS.

The Dog in Health and Disease. By Prof. Wesley Mills, McGill University. Second edition; published by D. Appleton & Co., New York. So rarely has the successful sale of books of special interest to the veterinary profession demanded a second edition, that it must prove very gratifying to the author of this valuable work to enjoy such an experience, and in so short a period of time. Many new points have been added to the book, and much valuable information added bearing upon medication, that we are sure that many of those possessing a copy of the first edition will want one of the second. Prof. Mills makes a good point in his assertion that those who are to give succor to the dog in disease should be fully acquainted with the dog in health, and familiar with the various breeds and types of dogs, to all of which we give hearty approval.

The American and Continental Sanitas Co. has just issued, in connection with its many preparations, a small book entitled *How to Disinfect*. To those who have been using Sanitas preparations it will prove a handy and convenient reference and guide as to the most effective preparations in the hospital, stable, kennel, poultry-house, etc.

Practical Toxicology. For Physicians and Students. By Prof. Dr. Rudolf Kobart. An authorized edition of this work, translated by L. H. Friedburg, Ph.D., Professor of Chemistry and Toxicology at the American Veterinary College, is in press, by the publishing house of W. R. Jenkins, New York City.

U. S. V. M. A.

Committee on Army Legislation.—Dr. J. P. Turner, Ft. Myer, Virginia; Dr. John R. Hart, 2577 Amber St., Philadelphia, Pa.; Dr. F. H. Mackie, Fair Hill, Maryland.

Committee on Military Affairs of the Senate.—Hawley (Chairman). Republicans: Proctor, Shoup, Sewell, Warren, Elkins. Democrats: Bates, Cockrell, Palmer, Mitchell (of Wisconsin), Walthall.

Committee on Military Affairs of the House of Representatives.—Hull, Iowa (Chairman); Curtis, New York; Marsh, Illinois; Woomer, Penna.; Griffin, Wisconsin; Southwick, New York; Parker, New Jersey; Bishop, Michigan; Fenton, Ohio; Catron, New Mexico; Tracy, Nebraska (Rep.); Tarsney, Missouri; Tyler, Virginia; McClellan, New York; Washington, Tennessee; Hart, Penna.; Lockhart, North Carolina (Dem.).

BILL INTRODUCED BY REPRESENTATIVE DOVENOR, OF WEST VIRGINIA,
IN THE HOUSE.

AN ACT to fix the pay, allowances, tenures of office, and rank of the Veterinary Surgeons of the United States Army.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled:

SECTION 1. That the Veterinary Surgeon of the United States Army shall be given the pay, allowances, tenure of office, and relative rank of Second Lieutenants of Cavalry.

SEC. 2. That the number of Veterinary Surgeons in the Army of the United States shall not exceed two (2) for each regiment of Cavalry.

SEC. 3.¹ That hereafter all appointments as Veterinary Surgeons in the Army of the United States shall be confined to graduates of the recognized Veterinary Colleges of the United States, and candidates for such appointments shall be citizens of the United States and shall be required to pass such examination as the Secretary of War shall direct.

The Army Legislative Committee, Messrs. Turner, Hart, and Mackie, are all known as hard workers, and they have staked their reputations as sure winners in the battle for official recognition just opened. They will have as aids in their work this year the best organized and trained assistants that have ever supported such a Committee.

Buffalo had but one competitor in the battle for the meet-

¹ Added at suggestion of Chairman Hull of Military Committee of the House.

ing of the U. S. V. M. A. Nashville, Tennessee, was strongly pressed for this year's gathering, especially in view of the Centennial Anniversary of that city, at which time they will hold an exposition. The Southern veterinarians, alive to the value and influence of these annual gatherings to any community, and appreciating how much they raise the standard of the profession in new territory, made a strong plea for this recognition. We are sure that at no distant day the National Association will visit some one of the central Southern cities.

The Committee on Diseases, this year, with Dr. S. J. J. Harger as Chairman, will have as a western representative Dr. W. B. Niles, of Ames, Iowa, whose great interest and efficient efforts will always be remembered gratefully in connection with the Des Moines meeting.

The first eight votes cast for the place of meeting were all in favor of Buffalo.

Secretary Stewart has entered upon his work with a zeal and interest that will tell strongly upon the meeting of 1896.

We understand that the Chairman of the Publication Committee will have something of interest to say at Buffalo, and we are informed that he will say it strong.

Congressman Hull, of Iowa, whom many will remember with pleasure attended the banquet at the Des Moines meeting, and who won the good-will and fellowship of the Association members by his friendly remarks on Army Legislation, and who has been honored by Speaker Reed with the Chairmanship of the Committee on Military Affairs, has already given our Army Legislative Committee a friendly hearing and many valuable suggestions.

CONTROL WORK.

District of Columbia. The health office of the District, through its veterinarian, is now engaged in enforcing the law regulating dairy-inspection. Under this law all milch-cows that supply milk to the city are inspected, and a certificate granted when found free from disease.

New Jersey. Another one of New Jersey's cities has erected a slaughtering establishment for the preparation of horseflesh

as a food-product. The local board of health has reason to believe that diseased animals are destroyed, and an investigation is being pushed to determine the facts in the case.

A number of cattle that have been under the care of Veterinarian Conrow, of Moorestown, N. J., covering a period of two years, and which were tuberculous, as indicated by tuberculin-test, and had received at stated periods injections of tuberculin, were recently destroyed and many evidences of curative results were found present. The most of the tuberculous deposits were encysted and had undergone retrograde changes, indicating a termination of the power of the active bacilli.

New York. At Malone a herd of thirty high-bred cattle were examined with tuberculin by the State Board of Health. Thirty proved tuberculous, and were ordered killed. Other herds in the same county will be examined at once.

Fifty-nine cattle afflicted with tuberculosis were killed at Deposit recently by the New York State Board of Health.

AMONG THE COLLEGES.

ONTARIO VETERINARY COLLEGE. This institution held its Christmas examination on December 20th. The usual Board of Examiners, which is composed of practising veterinary surgeons, officiated. The following gentlemen, after being subjected to a rigid examination, were awarded graduation diplomas: Donald Currie, Stayner; Francis Duncan, Unionville; John M. Farquhar, Greenock, Scotland; Truman Earl Gore, Clarksburgh, W. Va., U. S.; Cecil Howell, London, Ont.; John S. Jones, Poland, N. Y.; R. L. Kann, Lisburn, Pa.; Archie A. McArthur, Stayner; Allan McDonald, Erin; Angus McDonald, Teeswater; John J. McGregor, Carleton Place; Arthur E. Miller, Myersville, Ohio; James H. Powers, Providence, R. I.; David D. Reid, Teeswater; William J. Rouse, Mitchell Square; Daniel Henry Super, Warrensville, Pa.; Jacob W. Wagner, Tavistock; E. C. Wisman, Bryan, Ohio.

Primary examination, anatomy—George Hamilton Leslie.

UNITED STATES COLLEGE OF VETERINARY SURGEONS. This school has materially strengthened its faculty and added to the advantages offered her students by securing for the chair of zoötechnics and sanitary medicine the services of Dr. J. P. Turner, graduate of the Veterinary Department of the University of Pennsylvania and veterinarian to the Sixth Regiment of the United States Army.

The chair of microscopy and bacteriology will in the future be filled by Walter W. Alleger, Ph.D., M.D.

A VETERINARY college, carrying the royal seal, is now assured for Ireland, and will be located at Dublin. A grant of some seventy-five thousand dollars will be accorded by Parliament for the establishment of suitable buildings.

THE NEW YORK COLLEGE OF VETERINARY SURGEONS has a junior class of twenty-three under the new order of a three years' course. In her three classes some fifty-four students are in regular attendance.

McKILLIP VETERINARY COLLEGE has some twenty-three students enrolled in her two classes, a very good showing for a new school entering upon its career at a time when every other college is suffering a serious loss in the number of her matriculants. Starting out as a three years' school, and having raised her tuition fee from seventy-five to one hundred dollars the second year, would strongly indicate that the future veterinarian appreciates the fact that he must be better educated than his predecessor to win a livelihood and place among scientific workers.

OHIO VETERINARY COLLEGE. Those directors and stockholders of the Ohio Veterinary College at Cincinnati who were induced to invest their money in the establishment of this school have found it rather a serious undertaking, and not so great a money-winning venture as they supposed. They are very willing to sell out at the present time at a great shading of the original value of the stock, and the directors and stockholders are now confronted with lawsuits for the debts contracted in the name of the school, and are endeavoring to evade payment of the same. They no longer direct the affairs of the school, but have leased the building, good-will, etc., to Dr. Thomas King, the former dean, whom we understand assumes all responsibilities from October 1, 1895, and who has in view the purchase of the franchise and the reorganization of the school next year. There can be but one outcome for a long period in the future of such schools, erected on the basis of a money-winning investment—they will go to the wall, for the time today required in properly equipping a veterinary practitioner is very different from ten years ago, and this means a large outlay of money for equipment and maintenance that cannot be won back for many years. This school in its short but varied career has changed her dean three times, and each contributed largely to a forced rearrangement of her classes and studies.

All students matriculating after January 1, 1896, must do so for a three years' course, which adds another school to the advanced colleges.

CHICAGO VETERINARY COLLEGE has suffered a serious loss in the number of her students for the present year. Her total number of matriculants falls below fifty. The hard times throughout the whole country, and especially the West, have told severely upon the classes in all veterinary colleges.

THE REFORM OF VETERINARY STUDIES IN AUSTRIA. On the 26th and 27th of September discussions were held by the Ministry of Education in regard to the reform of veterinary studies. There were present at the meeting representatives from the Department of the Interior (Dr. Emanuel R. von Kusy and Bernard Sperk), from the Department of Education, from the Department of Agriculture (Freiken von Hohenbruck), from the De-

partment of War (Colonel von Huber), from the Medical Faculty in Vienna (Prof. Max Gruber), from the Faculty of the Imperial Military Veterinary Institute (Dr. Bayer and Professor Polansky), from the Faculty of the Lemberg School (Professor Kadyi and Dr. Szpelman), from the Faculty of the Agricultural High School (Professor Nieckeus), and finally from the Veterinary Association of Austria (Dr. Hausner from Feldsberg).

According to the meagre reports of the preceedings and result of the discussions which have come to us the Commission gave serious consideration to some of the suggestions which were made a long time ago by the Veterinary Association of Austria, so that now there is hope that the Austrian veterinary schools will at no very distant day be put on a par with those of the neighboring States. We refer here especially to the requirement of greater maturity (on the part of the students), and what stands in intimate connection with the same, namely, the raising of both institutions to high schools. The lengthening of the course to four years and a thoroughgoing reform of the course of study, with especial regard to practice, would follow as a matter of course, and not only the oft-expressed wishes of veterinarians, but also those of agriculturists, would be realized, in so far as the latter do not belong to those circles who consider it opportune to plead for the lowering of the standard of education among veterinary surgeons.

The discussion was held over a very comprehensive and elaborate plan of study, the details of which received the most thorough and objective criticism, at the same time the difference in the standpoints of the civil and military departments were brought out clearly, although these differences were evidently not of enough importance to lay any obstacles in the way of the reform aimed at. We cherish the hope, therefore, that the era of reform already begun may not be hindered in its progress by these differences of opinion, and that the question of finances may not prove an obstacle.

The proposed plan of study, which reached us just before going to press, is as follows:

First Year. First Term: Physics and chemistry, as far as they relate to medicine; general zoology and parasites; general anatomy and histology; descriptive anatomy of the domestic animals; theory of horseshoeing and exercises in the blacksmith shop; exercises in preparing anatomical specimens. Second Term: Chemistry; botany, with especial reference to food, medical, and poison plants; encyclopædia of agricultural plants, more especially of the diseases of food-plants; descriptive anatomy of the domestic animals; embryology; exercises in the chemical laboratory; exercises in the use of the microscope and in the examination of normal tissues; exercises in the blacksmith shop; instruction and exercises in the handling of domestic animals, harnessing and saddling, and as far as possible in riding and driving.

Second Year. Third Term: Topographical anatomy of the domestic animals; theory of breeding (judging, training, feeding, etc.), of the agricultural animals; physiology; pharmacognosia; pharmacology; toxicology; theory and art of prescribing; preparation of anatomical specimens; exercises in the examination of food (food-stuffs); pharmaceutical exercises. Fourth Term: Theory of cattle-breeding; physiology; general and experimental pathology and pathological anatomy; bacteriology; pharma cogno-

sia; pharmacology; toxicology and theory and art of prescribing; exercises in external examination and in judging the agricultural animals; excursions for the purpose of practical instruction in cattle-breeding; pharmaceutical exercises.

Third Year. Fifth Term: Special pathological anatomy of the domestic animals; special pathology and therapeutics and internal clinic; special surgery, together with ophthalmology and surgical clinic; theory of instruments, bandages, and operations; pathological operations; exercises in operating and in application of bandages; exercises in the use of the ophthalmoscope. Sixth Term: Special pathology and therapeutics and internal clinic; obstetrics; history of veterinary surgery; pathological operations; pathological, histological, and bacteriological exercises; practice in operating and in applying bandages; obstetrical exercises with the phantom and on living animals.

Fourth Year. Seventh Term: Special pathology and therapeutics and internal clinic; special surgery, together with ophthalmology and surgical clinic; theory of epidemics and demonstrations; State veterinary medicine (cattle- and meat-inspection, veterinary police, etc.); seminary for State veterinary medicine; pathological operations and specimens; polyclinic. Eighth Term: Special pathology and therapeutics and internal clinic; special surgery, together with ophthalmology and surgical clinic; polyclinic; ambulatory clinic in the city and neighborhood; temporary disposition of students in districts for the purpose of introducing them into practice; exercises and excursions for the purpose of instruction in State veterinary (sanitary) medicine; pathological operations.

Examinations in Course. Students of veterinary medicine can only be inscribed in the second- or third-year course after they have passed the examinations of the preceding year satisfactorily. The examination in course for promotion into the second year includes: Medicinal physics; chemistry; general zoölogy and parasites; botany; encyclopædia of the plant kingdom, with special regard to the disease of food-plants. The examination for entrance into the second year includes: Theory of animal breeding; anatomy of the domestic animals, including topographic anatomy; histology and embryology; physiology, pharmacology, together with pharmacognosia, toxicology, and prescribing.

Final and More Thorough Examinations. 1. Theory of animal breeding; descriptive and topographical anatomy of domestic animals; histology and embryology; physiology, pharmacology, with pharmacognosia, toxicology, and theory and art of prescribing. 2. General pathology and pathological zoölogy; bacteriology; special pathology and therapeutics and theory of epidemics; State veterinary medicine. 3. Surgery, inclusive of ophthalmology and theory of operating; obstetrics; horseshoeing. In the finals, the examination in every subject takes place at one time (in one act), and is practical as well as theoretical.

For the 1st final the candidate must pay a fee of 40 florins; for the 2d and 3d one of 35 florins each. In case of failure the candidate has only to pay half the sum at a second examination.

The veterinary diploma is written in the Latin language. For the preparation of the diploma upon parchment the fee is 10 florins, and for every subject in the examinations in course 3 florins.—*Thierärztliches Centralblatt*, October 1, 1895.

SOCIETY PROCEEDINGS.

IOWA STATE VETERINARY MEDICAL
ASSOCIATION.

(Concluded from page 767, November, 1895.)

AFTERNOON SESSION, SEPT. 9, 1895, 1.30 P.M.

President Miller called meeting to order, and appointed Drs. Edwards, Kingery, and McBirney to vacancies on Board of Censors.

Report of Committee on Publication of the proceedings of the 1894 meeting was made by Dr. Brown, chairman, who reported that the same had been printed in pamphlet form, paper cover, 134 pages, at fifty cents per page, 250 copies. Total cost, \$67.00, and a copy distributed to each member of the Association. On motion of Dr. Niles, seconded by Dr. Gibson, the report was accepted.

Report of committee to secure the 1895 annual meeting of the U. S. V. M. A. in Iowa, was made by the Chairman, Dr. Niles, who said the committee, after long and continued efforts, had secured the meeting; that it will convene in the Horticultural Rooms at the Capitol Building, tomorrow, and promises to be a great success. On motion duly made and seconded, a vote passed to accept the report.

The Secretary, Dr. John E. Brown, offered the following report:

"In reviewing the work of this Society for the past year, we become cognizant of the fact that our Association has just experienced an era of special prosperity. First—probably not since its organization has the Society held such an interesting, and in every sense profitable, convention as the one held last year. The members there present, filled with enthusiasm, have spread the news of its success in all sections of the State. Following those reports went the official report, a pamphlet of 125 pages, to each member, giving as full an account of the proceedings as your Secretary was able to note during the sessions. From the many complimentary notices received, I am sure this effort has been appreciated by our members, and that it has proved to be quite an active agent in arousing dormant interests among members not present, in the Association work. As to the wisdom of issuing such a report each year I think there can be no question. Through it, members unavoidably absent are kept in sympathetic touch with the aims and endeavors of the Society. The publication of such a report, however, involves an expenditure of money that our Association with its present rate of dues will not be able to meet. It will be found by reference to our financial statements in the past that, with our present membership and mailing list, the regular yearly expenses will not fall far short of from \$50 to \$65. Add to that \$60 to \$70 for the printing of the annual report and we have a total of, say, \$125. Our present membership being seventy-one, this equals a per capita of about \$1.75. From this there would be some shrinkage in the form of lapses and suspensions; but new membership fees each year would probably balance that deficit. From the above statement, one of two

things becomes painfully evident: we must either raise our annual dues or cease to issue our report.

"Another crowning feature in the work of the Association during the past year was the successful effort of our committee to capture and bring to Iowa the annual meeting for 1895 of the U. S. V. M. A. This puts in reach of every veterinarian in the State an opportunity to attend what now promises to be one of the most brilliant and profitable conventions of the character ever convened.

"With the increase of the veterinary population of Iowa, now numbering 165, the I. S. V. M. A. has added a very creditable percentage to its membership. Last year 17 new members were admitted, and at this session several applicants seek admission. All of us who have been engaged in a private practice know that for the past two years the business has been on a general decline. Under these circumstances, feeling that the future was uncertain, many have become somewhat discouraged and held off that would have under favorable circumstances joined the Association and become useful members. Not only has that cause played an important part in lessening the number of applicants for membership, but has also created a disinterested spirit in many of our older members, keeping them away from our meetings, thus weakening our forces and crippling our progress. Our present membership is made up of 71 active and 7 honorary members. On November 14, 1894, the date of our last meeting, there was outstanding against the members \$181 in unpaid dues and memberships; \$94 of this was cancelled with the suspensions directed at that time, leaving \$87 against the membership then in good standing. Your Secretary was instructed at that meeting to notify each of those whose names were proposed for suspension for non-payment of dues of his indebtedness to the Association, and that if the amount named was not immediately paid each one so failing to remit should stand suspended. Notices to the above effect were mailed on or about December 15, 1894, and only one reply ever reached this office.

"Both through circular letters and private correspondence I have endeavored to keep in touch with, not only our own membership, but with all members of the profession in Iowa. A close watch has been kept for new representatives of the profession coming into the State, and no effort has been spared to enhance the interests of the Society.

"During the time that I have served as your Secretary I have endeavored to compile a complete list of the names of all graduate veterinarians practicing in the State, together with the post-office address, the name of the college of which they are graduates, and the year of graduation. This list has required frequent revisions, and, while it may not now be entirely complete, by its aid I have been in communication with almost every graduate in Iowa. There is not a man in Iowa, to my knowledge, who is eligible to membership in the I. S. V. M. A. who has not only been urged to join the Association, but was also given official notice of this meeting and invited to attend.

"The report of the 1894 meeting was received from the printers on June 11th, and on June 12th a copy was mailed at the Oskaloosa postoffice to each member of the Association, except two or three whose postoffice address had been changed and I had some trouble in locating. Compli-

mentary copies were sent to the *Veterinary Review*, *Veterinary Magazine*, and JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES, with a notice that duplicate copies might be obtained from the Secretary for fifty cents each. Similar notices with sample pages and programme of the meeting were mailed to members of the profession in this and other States. Orders came in sparsely, and complimentary copies were then sent to some of the stock journals with the same notice, but the pamphlets did not meet with ready sale, only a few copies were called for.

"The 'resolutions' adopted at the last meeting and directed to the State Board of Health, were sent (one copy) to the President, Dr. J. C. Shrader, and (one copy) to the Secretary. Responding to these resolutions, Dr. Shrader sent me the following letter:

DR. JOHN E. BROWN, Sect. S.V.M.A., Oskaloosa, Iowa.

DEAR DOCTOR: Yours containing copy of resolutions passed by your Association in relation to tuberculosis in cattle duly received. I am pleased to note this action taken in regard to so important a matter. I shall take pleasure in laying this before the Board at their next meeting, about February 1st. Allow me to assure you the Board are awake to the great danger to our people from this source, but our hands are almost tied for lack of funds to thoroughly investigate and inspect the herds of our State, but we will do all we can.

Truly yours,

IOWA CITY, IOWA, January 17, 1895.

J. C. SHRADER.

"The resolution adopted and directed to the Iowa Legislature is still in my possession, as that body has not been in session since our meeting.

"All will now agree that the past year's work is well marked with happy results. Certainly the I. S. V. M. A. is an potent factor for the elevation and advancement of veterinary interests in Iowa. We, as veterinarians, have failed in great part in the past to present ourselves and the profession to the public in that light which would suggest to them that we might be a necessity or even a possible help in providing for and enforcement of sanitary measures, the now most important part of all veterinary work; and until the public recognizes the profession in some other capacity, as well as simply treating a few of the ills and injuries of the lower animals, we will not find ourselves occupying a plane, professionally, very much in advance of the common country "horse-doctor." The I. S. V. M. A. has all these years had for its high aim the part of keeping its members up to the standard of proficiency. I do not believe the Association has accomplished all that it might have, but if the profession has not given it universal support then the blame rests heavily upon those who have failed to do their part. I believe the Association can and will do more in the future than it has in the past. I believe more of our members should be drafted into a working force. The profession is in its infancy. Investigators are constantly revealing hitherto hidden facts. New surgical operations are being performed and new medicinal agents employed with greater or less success. Some of our sister societies have created committees to investigate these and make reports at their regular meetings. Would it not be well for us to follow their example? That Iowa has a live organization whose members generally are well abreast of the times, and that they as a Society are a power in the advancement of the veterinary interests of the State, are facts in which each member may glory in a just sense of pride. Meeting together at these conventions, with a free interchange of thought and ideas, invariably aids one

to realize his own professional narrowness, and proves to be a wholesome stimulus to a healthful effort for greater achievements.

"In closing I wish to thank the members of the Association for their hearty co-operation and ready response to all calls, thus greatly aiding in the work of this office. With a sincere hope that the coming year will be one of renewed activity and greater prosperity to our beloved profession and to the I. S. V. M. A., I respectfully submit the foregoing as my official report."

On motion of Dr. Austin, seconded by Dr. Bown, a vote passed to accept the report. Discussions followed regarding raising of dues and printing of reports. It was not deemed expedient to increase the dues, but, as it is desirable to have a report of the meeting, Drs. Stuart and Niles were appointed a committee of two to confer with the publishers of *THE JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES* and attempt to have the proceedings of the meeting published in that journal and secure a reprint for each member of the Association.

The Treasurer's report showed that during the period of time from November 14, 1894, to September 9, 1895, the total receipts were \$113.75, and expenditures \$123.93. On motion of Dr. Johnson, seconded by Dr. Parslow, the report was referred to the Auditing Committee. Drs. Scott, Bown, and McBirney were appointed an auditing committee.

Dr. Stalker, Chairman of the Committee on Newspaper Articles, said the committee had done nothing, and he was not advised as to the duties of that committee. A discussion followed by Drs. Miller, Gibson, Niles, and others. The committee was continued, its duties to be general supervision over all articles relating to sanitation, legislation, and education.]

The Auditing Committee reported the accounts of the Treasurer in satisfactory condition, and the report was accepted.

The Chairman of the Committee on United States Army Legislation was not present, hence no report was made. On motion of Dr. Niles, with Dr. Gibson's second, a vote was passed continuing the same committee another year.

The Board of Censors reported favorably on the following applicants for membership and the same were elected: Drs. C. A. Clinton, M.D.C.; H. M. Gillian, V.S.; G. E. Armstrong, M.D.C.; Charles Williams, D.V.S.; Peter Malcolm, V.S.; James Vincent, D.V.M.; S. T. Miller, D.V.S.; H. T. Stewart, M.D.C.; D. H. Miller, M.D.C.; H. E. Talbot, M.D.C.; S. K. Hazlet, M.D.C.; C. E. Stewart, M.D.C.; J. L. Williamson, D.V.S.; A. Collasawitz, M.D.C.

To accommodate the time of one of the essayists, the business of the meeting was now set aside, and the literary part of the programme inserted.

Dr. S. H. Kingery, of Creston, read a very interesting and carefully prepared paper on "Tetanus."¹

The discussions following were taken part in by Drs. Carey, Niles, Gibson, Wattles, Brown, Hoskins, Whitbeck, Walrod, Miller, Williams, Edwards, and others. Quite a general impression seemed to prevail that we do not have idiopathic tetanus; that it is due to traumatic causes, though in many cases the traumatism is obscure. Also that recovery depends more on the

¹ See page 27.

severity of the case than any special line of treatment. Quietude, darkness, and non-interference still have their advocates, while others entirely disregard these precautions and really advise the reverse, leaving the animal to his accustomed habits. Serum-therapy was also discussed.

Dr. W. L. Williams, of Bozeman, Mont., was then called upon and read an excellent paper entitled "Immobility in the Treatment of Diseases of the Extremities."¹

The discussion of "splints" of various kinds was indulged in by Drs. Stewart, Vincent, Gibson, Kingery, Carey, and others. The meeting adjourned till 7.30 P.M.

EVENING SESSION, 7.30 P.M.

Meeting called to order by President Miller. Dr. Stalker, Chairman of Committee on Arrangements for U. S. V. M. A. Meeting, said that the Horticultural Rooms at the Capitol Building had been secured for the place of meeting; that the city Mayor or Governor Jackson would be present at the opening session and give an address of welcome. The Savery House had been selected as headquarters. Entertainment for the visitors had been talked over, but nothing decided upon. A trip to Ames College was talked of; also a half-day's visit at the State Fair, but the officers of the United States Association object to either, on account of consuming too much valuable time. After considerable discussion on the subject, the committee was instructed to arrange for a theatre party, and each member of the Society was assessed one dollar to cover the expenses of the same. Dr. Wake was appointed to collect the assessment from the members present, the money to be turned over to the chairman of the committee.

The report of the Committee on Veterinary Legislation (Drs. M. Stalker and John E. Brown) was made by the Chairman, Dr. M. Stalker, as follows:

"A bill, a copy of which is herewith presented, was prepared and introduced in the last general assembly. It was referred to the Senate Committee on Medicine and Surgery, and received the consideration of that committee. The opposition to any measure regulating the title, or practice of veterinary surgeons, without conferring diplomas on non-graduates, was such as to make it manifest to the friends of the bill that it could not pass without being so amended. It was the judgment of the committee, and it is our belief from discussions had in this body over the same subject, that it is the judgment of the entire Association that any bill which provides for issuing diplomas to non-graduate practitioners would be highly detrimental to the advancement of veterinary science in the State. It was our judgment that any benefits resulting from desirable provisions of the bill would be more than neutralized by such an amendment. Your committee was left to choose between withdrawing the bill and accepting an amendment that in their judgment would render it worse than no legislation. They choose the former course, and asked to have the bill withdrawn."

Discussions followed by many of the members. Dr. Johnson moved and Dr. Bown seconded that the report be accepted. Moved by Dr. Niles, with Dr. Bown second, to amend by adding, "and the committee retained in the interest of the bill." Vote on the motion as amended was carried.

¹ See page 703, November, 1875.

Report of Committee on Sanitation (Drs. W. B. Niles, W. H. Austin, and G. A. Johnson) was made by the Chairman, Dr. Niles, and read as follows :

"When last year I suggested the advisability of appointing a committee on sanitary science, the thought did not occur to me that I might be placed on the committee. Since our worthy President has seen fit to make me chairman of that committee, I find it necessary to present something for your consideration.

"The field of sanitation is so large that your committee has found it a difficult matter to determine how best to deal with the subject. After consulting with other members, it was decided that we would endeavor to learn of what was being done along this line in some of the more progressive European countries and in the different States of our own country, and discuss what we are doing in Iowa, and why we should do more ; limiting the discussion to a consideration of dangers arising from the use of animal foods, and the restriction of contagious diseases of our domestic animals. Being disappointed in obtaining copies of the sanitary laws of European countries, we will only state regarding this point what is probably already known to most of you, that these countries, being older and so governed that compulsory laws can be more easily passed and enforced, have in operation very efficient sanitary rules and regulations that not only tend to arrest and prevent the spread of contagious diseases, but to also reduce to a minimum the dangers arising from the use of animals and their products for food. This is notably the case in Germany, where a very thorough system of meat-inspection is in vogue. All animals must be killed at public abattoirs and carefully inspected before being placed on the market. I have heard it stated that at least in one country of Europe all animals, whether for public or private use, must be killed and inspected at the abattoir. This is no doubt true.

"In our own country quite different conditions prevail. We are a new country and do not take kindly to compulsory laws of any kind. Nevertheless, we have made much progress during the last ten years.

"The National Government, by establishing the Bureau of Animal Industry with a veterinarian as chief, has accomplished very much in the way of preventing the spread of disease in domestic animals, and by the establishment of quarantine rules and regulations set an example to the several States. As a result of this and other causes a majority of the States have passed laws for the purpose of preventing the spread of contagious and infectious diseases.

"You are all familiar with our own State law, which provides for the appointment of a State veterinarian and gives him general supervision of all contagious and infectious diseases among domestic animals within, or that may be in transit through the State, with power to establish quarantine, etc. Several other laws relative to diseases of animals are also on our statute books.

"The sanitary laws of other States are quite similar to our own. By the enactment of these laws in the several States very much has been done, as we all know, in limiting the extent of infectious and contagious diseases among our farm animals. In some States glanders has been almost eradicated, Texas fever largely rendered a thing of the past, and contagious pleuro-pneumonia, by the assistance of the National Government, absolutely stamped out of the United States. Many other affections have also

become more or less restricted in their ravages. Notwithstanding all this, we believe sanitary work along this line can be much improved, as we shall attempt to show later on.

"In another field of sanitary work, that of lessening the danger arising from the consumption of diseased foods derived from animal sources, we have not progressed so far. Until recently only in a few of our largest cities was there any system of meat-inspection in vogue. About four years ago the National Department of Agriculture inaugurated the work at some of the large packing-houses engaged in exporting meat to Europe. This work on the part of the department has been extended until now many of these houses are provided with veterinary inspectors, and it is with pleasure that we note the continued improvement in the work. All cattle going through houses having inspectors are now inspected both on foot and after slaughter, whether intended for export or home consumption. In addition to the work already mentioned a few cities employ a veterinarian, whose duty it is to inspect all meats sold in the city as well as fish, fruits, etc. Thus we see that something is being done toward providing the public with wholesome animal food, but that as yet only a small fraction of the meat consumed in the country is inspected in any way. To illustrate, only at two points in our own State have we government meat-inspectors, and only one city has city inspection of meats. The condition in other States is very similar. It is pleasing to note, however, that very recently veterinary inspectors have been appointed in several large cities of the country. At St. Louis outbreaks of Texas fever and anthrax emphasized to the inhabitants the necessity for careful inspection of meats and dairies.

"We all know that during the past two years the public has been fast learning the importance of sanitation, and that never before have the members of our profession realized as much as now the importance of a knowledge of this subject. It is also pleasing to note that many of our veterinary colleges have realized the importance of the subject and have added meat and dairy inspection to the course of study.

"Let us more fully consider the subject as it concerns us here. It may be asked, What contagious diseases of animals occur in this State calling for the application of sanitary regulations? Several may be mentioned—glanders, while rarely seen compared with ten years ago, still demands attention. There is no question that this affection could be completely eradicated could we have and enforce the necessary regulations. Some recent work in Europe has shown that many latent cases of this disease exist in exposed herds, only capable of being detected by the use of mallein. These obscure cases escape detection and eventually start new outbreaks; and it seems quite likely to the writer that the disease is lingering in our midst in this way.

"Tuberculosis in cattle is very prevalent not only here but in other States, and on account of its relation to the health of the people is the most important of all. This disease prevails much more extensively in Iowa than most of you or the people at large suppose. A forthcoming bulletin of the Iowa Experiment Station by the Veterinary Department will show that some herds have proven tuberculous to the extent of from 20 to 60 per cent. Others not suspected of being affected before the test have shown as high as 10 per cent, diseased. Many herds have, of course, proven free from disease. Of the total number tested by the State and Experiment Station about

15 per cent. have reacted to the tuberculin test. This is a large percentage, and would not be reached were all animals tested. The disease is not confined to any breed or class of cattle, but involves short-horns, polled Angus, Jerseys, scrubs, and others, as well as breeding herds, dairy cattle, private cows, and we may say animals kept under all conditions.

"Without doubt the disease is being quite extensively scattered over the country by breeders who have diseased herds, and this class of herds is quite numerous. Thus we see in this disease great danger to our cattle, and, as the disease may be communicated to man by the use of tuberculous meat or milk infected with the germs of the disease, great danger also to the public health. Here then is a great field for sanitary work, but, as our laws now are, the disease cannot be effectively dealt with. With proper laws much more would be possible.

"In relation to swine, the diseases of hog-cholera and swine-plague are important. You are well informed regarding the annual ravages of these affections. This loss could be and should be almost entirely prevented. With our present laws *this* is impossible. Strict quarantine against animals outside the State and of diseased herds within the State must be established. While these affections are not communicable to man, the economical feature is very important. While no figures are at hand showing the amount of yearly loss from these affections, it is apparent to all of you that it is sufficient to call for the application of the most thorough sanitary regulations.

"About the danger arising from the consumption of diseased animals and their products for food very much might be said, but we will only briefly discuss some of the more important points. Practically the people have no guarantee that they are using wholesome meats, milk, or butter. It is true we have some laws bearing on this point, but, while a penalty may attach to the selling of diseased meat, it is the duty of no one to learn whether diseased meats are sold or not, and if the butcher feels so disposed he can kill and sell the worst diseased animals to be found. When we go to the shop to purchase beef, we know not whether it came from a healthy carcass, a tuberculous animal, or one that was not in some other way rendered unfit for food. Pork, mutton, and veal also may or may not be wholesome. The only guarantee we have is the honesty of the dealer. The flesh if from an animal free from disease may, by being kept too long or in bad quarters, become unwholesome. As any animal may be killed and sold for food, so may the milk and butter from any animal be placed upon the market. As long as there is no inspection of our dairies and their products except the test for butter-fat in the milk, just so long may milk and butter infected with the germs of any disease be sold. It has been found that a number of diseases may be communicated in this way, for example, scarlet fever, diphtheria, typhoid fever, and tuberculosis. The last is by far the most important, since it has been proven that tuberculous cows often give infected milk. That milk from cows with non-tubercular udders may contain the tubercle bacilli has been shown by several investigators. Were tuberculosis a rare infection of milk cows, the danger from this source would not be great, but is by no means true of any part of the country. As before stated, the observations of veterinarians in this State have shown that many of our dairy herds are badly infected, as the following figures show. In one herd of dairy cows 30 out of 50 were diseased; in another 13 out of 30; this herd was supposed to be free from disease.

"It is not necessary in this report to enter into an argument to show that this disease *can be* communicated to man in the way previously indicated, nor enumerate other reasons why we should have thorough meat and milk inspection. That we have in this State no efficient inspection of dairy animals, their surroundings, etc., is well known to you all. In a paper read to this Association last year I endeavored to deal with the necessity for this inspection and discuss what it should consist of, and I will not further discuss the question here. At our last meeting the important subjects of government and city meat inspection were ably discussed in two papers, to which you are referred for further information.

"A few words regarding our part as sanitarians and we will end the report, which seems already long.

"In the sanitary work of the future the veterinarian must play a very important part. To a great extent he will be intrusted with the guarding of the public health. Inspectors of meat and of our dairies will be graduates of veterinary colleges. Not only will official veterinarians figure as sanitarians; the practitioner will give advice that will materially lessen the loss due to contagious and infectious diseases. Such advice will be asked for and paid for the same as other veterinary services. At the present time we can do much by assisting in the education of the public to a realization of the importance of sanitation as a safeguard to human life, and as a matter of economy. Hoping this subject of sanitation may be amply discussed by this body, this report is respectfully submitted."

On motion by Dr. Rich, with Dr. Stalker's second, the report was accepted. The discussions following were largely on the subject of tuberculin tests, and were indulged in by a goodly number of the members.

Through absence of the Chairman of the Committee on Collective Statistics no report was made.

Dr. Niles in reporting the conference of the committee appointed, with Dr. Hoskins, relative to publishing report and furnishing reprints to the members, said Dr. Hoskins would only print an abstract of the same. Moved by Dr. Gibson, duly seconded and carried, that the proceedings of the meeting be forwarded to Dr. H. and he should be privileged to publish such portion of it as he sees fit.

The change of Section 1 of Article 3 of our Constitution, as proposed at the annual meeting of 1894, to read: "Applicants for membership must be graduates of legally authorized veterinary colleges requiring a curriculum of three years, of not less than six months each; but this change shall not apply to matriculants prior to 1896." On motion of Dr. Whitbeck, seconded by Dr. Stalker, a vote was carried to adopt the change.

Drs. R. G. Rich and J. I. Gibson presented a petition asking for a change of Article 4 of By-Laws of I. S. V. M. A. referring to "dues," to read, "Each member on being admitted to membership shall pay the sum of two dollars, and shall annually thereafter pay one dollar in advance to the Association. Any member in arrears more than two years shall be suspended until said arrears are paid." Motion by Dr. Johnson, second by Dr. Gibson, voted and carried, that the Secretary have printed three hundred copies of the Constitution and By-Laws as now amended.

The election of officers for the ensuing year resulted in: Dr. L. U. Shipley, President, Sheldon, Ia.; Dr. R. G. Rich, First Vice-President, Fayette Ia.; Dr. T. A. Bown, Second Vice-President, Chariton, Ia.; Dr. J. E. Brown,

Secretary and Treasurer, Oskaloosa, Ia.; S. H. Kingery, Creston, Ia., J. I. Gibson, Denison, Ia., J. McBirney, Charles City, Ia., Board of Censors.

On motion of Dr. Niles, duly seconded, the meeting adjourned to meet in this city at the call of the President and Secretary.

JOHN E. BROWN,
Secretary.

ABSTRACT OF STENOGRAPHER'S REPORT, U. S. V. M. A., 1895.

THE thirty-second annual meeting was called to order at 10.30 A. M. by President Hoskins, in Horticultural Room, Capitol Building, Des Moines, Iowa. The President then introduced Honorable W. S. Richards, private secretary to Governor Jackson, who apologized for the Governor's absence from the State, and then, in well-chosen words, gave a hearty and generous welcome to all present. President Hoskins responded with sincere appreciation of the warm welcome accorded the Convention, and followed with his annual address.¹

On roll-call, the following members responded to their names: Drs. Brainerd, Cary, F. H. P. Edwards, Faust, Gill, Harger, Harrison, H. G. Hoover, G. A. Johnson, C. P. Lyman, J. C. Meyer, Jr., McBirney, W. B. Niles, Osgood, A. F. Peters, T. B. Rayner, Salmon, Schwartzkopf, Stalker, S. Stewart, Trumbower, Wattles, Whitbeck, Williams.

Visitors: Drs. J. H. McLeod, Harold Sorby, William Drinkwater, S. H. Johnson, P. Macolm, H. G. Stover, C. J. Huerdey, G. M. Walrod, J. Miller, J. G. Parslow, G. A. Scott, N. R. Fullerton, J. B. Hollenbeck, J. A. Replogle, J. H. Gasson, W. H. Austin, C. A. Clinton, C. E. Garmen.

As delegates from Pennsylvania: J. C. Foelker and T. B. Rayner; Iowa: J. E. Brown; Massachusetts: F. H. Osgood; Missouri: G. T. Netherton. Representing the Iowa State Board of Health: Messrs. Carter, Dickinson, and Kennedy.

The Secretary then read the minutes of the meeting of 1894, which were approved.

The report of the *comitia minora* was then read and the following recommendations acted upon: That we accept the resignations of Drs. J. E. Cloud, J. H. Frinck, R. D. Eaton, Alexander Glass, and W. A. Hitchcock, which, on motion, was approved; that we expel from membership Drs. D. D. Lee and E. C. Beckett, of Boston, Mass., and G. J. Leo Hagenburger, of Brooklyn, for violation of the code of ethics, in unprofessional forms of advertising, in the case of Messrs. Lee and Beckett, and for the same reason and the placing upon the market of proprietary preparations, in the case of Dr. Hagenburger. Recommendation, on motion, adopted.

The following applicants, having complied with all the requirements, were favorably recommended for membership:

Ellis, Bird, Gray, John R. Hart, Killer, C. J. Marshall, Enoch H. Moore, Reagan, Joshua Miller, Arnold, Eagan, Emila Pouppert, L. W. Shipley, C. C. Cole, Edwin Hogg, C. B. McClelland, Sherrard, Charles Saunders, Fred. E. Pierce, Henry Shipley, C. M. Day, Thomas A. Bray, G. T. Netherton; and, on motion, duly elected.

¹ See page 708, November, 1895.

The roll of delinquents was then read by the Secretary.

The President referred to the unprecedented amount on the books unpaid, and said the work of the Association the past year had been greatly curtailed owing to the unfortunate condition of the treasury.

He asked for information from any present as to any reason why action should not be taken on any of the names read. The *comitia minora* recommended that sixty days after notice by the Secretary to delinquents of the amounts against their names due the Association, remaining unpaid, that the same be placed in a collection agency's hands for collection. This measure was discussed by several members, and, on motion, adopted with but one dissenting voice. The Secretary was instructed to carry it into execution at once.

The President then referred to the very large number of deaths among our members during the past year, and, in referring to the deceased, appointed committees to draft suitable resolutions of our regard for these deceased ones :

Dr. Robert Leis—Drs. H. D. Gill, J. C. Meyer, Jr., Samuel S. Whitbeck ; Dr. W. H. Paaren—Drs. D. E. Salmon, M. R. Trumbower, C. P. Lyman ; Dr. W. Bryden—Drs. F. H. Osgood, R. H. Harrison, John Faust ; Dr. J. F. Autenrieth—Drs. R. H. Harrison, S. J. J. Harger, W. B. Niles ; Dr. W. D. Middleton—Drs. John Faust, James L. Robertson, W. J. Coates.

Dr. M. Stalker then asked permission of the Chair to say a few words, when, on behalf of the State Board of Health, he informed the members that their offices on this floor of the Capitol were open, and to which a generous welcome was extended to all ; that the State Fair was now in progress at Des Moines, and that if the Association could find time to attend in a body, it would be a great pleasure to the Iowa Veterinarians in providing for the same.

Dr. Williams then gave notice in writing, signed by Dr. Osgood and himself, of a proposed amendment to the by-laws ; changing the same in regard to the date of meeting, which now reads " on first Tuesday in September," to read, " at such time as the Executive Committee may elect," stating the object to be that advantageous rates might be obtained in conjunction with other organizations. The President directed its reference to the *comitia minora*, to be reported back at our next meeting.

Dr. C. P. Lyman then offered a resolution, duly signed, changing the present name of *comitia minora* to that of Executive Committee as a better and more intelligent designation for this body. This was ordered by the Chair to take the same course.

Dr. R. H. Harrison then offered the name of Dr. John Desmond-War-mambool, Australia, for honorary membership. It was referred to the *comitia minora* to be reported back in September, 1896.

Reports of committees being in order, that of Intelligence and Education was called for and read by Dr. C. A. Cary, Chairman, together with a report by Dr. W. B. Niles, read by the latter, and one from Dr. R. A. Archibald, read by Chairman Cary, entitled " How Shall the Practitioner Continue His Education ? "

The several reports were then opened for discussion, and Dr. Salmon, taking the floor, objected to the direct allusion by Chairman Cary to certain colleges, and thought the author was too severe upon them, and that he placed too high a value on the courses at agricultural colleges.

Dr. Stalker said that it was rather a good plan to hold out a positive example of a school defective in its scope of teaching and then bring the others around this one for comparison. He felt there was great need in determining the qualifications first that a student should possess before becoming a veterinarian, and that the present demanded in students a higher literary training than ever before. He strongly favored a long curriculum in time, for it affords so much greater an opportunity to use even meagre facilities of teaching to so much greater advantage.

Dr. Schwarzkopf thought the Chairman was too severe in his criticisms of American veterinary colleges, and did not give them just credit for the good work accomplished under so many trying circumstances. He referred to the remarkable unity of action in the Association of Faculties, of the great triumphs already achieved, and how promising the future, and, further, that it was a time when every encouragement should be given those who were so deeply interested in this forward movement of the colleges.

The President then asked that all should remember that while the freest and fullest and broadest of discussion should follow all these committee reports, that it did not follow that these reports were indorsed by the Association; they were never considered in such a light, except where distinct resolutions or conclusions were specifically stated and submitted for such action.

Dr. C. P. Lyman in discussing the report referred to the very salutary effects in the past resulting from reports of this committee, and especially to the suggestion that has resulted in so strong and valued an organization as the Association of Faculties stands to-day. He thought greater good was to flow from a discussion of such a report of this kind from those not interested or directly connected with the teaching staffs of the schools, and from them new plans and suggestions would emanate that might receive the recommendation of the Association, and be considered in the Association of Faculties for the further advancement of the work being done by this body.

Dr. Osgood desired that a freer recognition be given to the work done by agricultural colleges, and considered them the best preparatory schools for veterinary colleges that we have.

Dr. Williams spoke of the worth of agricultural college training as a preparatory course, but felt that what most schools needed to-day was better education on more practical lines. He referred to the difficulty of arriving at a just estimate of the scope of teaching as laid down in the various college catalogues. He felt like strongly supporting the present great advances in many schools, and aiding them in better grading their courses and improving their faculties, leading to a more thorough practical education and training.

Dr. Harger felt that great good had already been obtained by agitation in this Association, and warmly indorsed the tendencies to increase its requirements for admission; he also felt that State legislation looking to the establishment of State Boards of Examiners, who would thus discern the progressive and thoroughly earnest schools, thus strengthening their hands and stimulating the laggard ones to better and more advanced efforts. He differed on one point with the Chairman, and strongly approved of the teachers in certain branches of a practical character to have private practices, from which so much valuable material may at times be garnered.

After corrections on misunderstood points by Drs. Schwarzkopf and Williams, the meeting adjourned until 2.15 P.M.

AFTERNOON SESSION.

On being called to order by the President, the report of the Committee on Diseases was called for, and Chairman Trumbower responded. All his colleagues had been enthusiastically at work, and the result was the most complete and voluminous ever presented to the Association. The report contained a very interesting communication from Prof. Liautard in France. The use of Pasteur's anthrax vaccine in New Jersey on some three thousand animals with very satisfactory results was reported.

Section B of the report, concerning anthrax, black leg, and tuberculosis, having been assigned to Dr. John Faust, was called for, and the latter responded, bringing out some salient points relative to tuberculosis and the value of preventive inoculation in anthrax; after which the meeting adjourned until 10 A.M. of the 11th.

(To be concluded.)

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

THE thirteenth annual meeting was held in the Sherman House, Chicago, November 20 and 21, 1895. On roll-call a full attendance of members responded.

An impressive address was delivered by the President, Dr. M. Wilson, of Mendota, and other papers were presented as follows: "My First Cæsarean Section in the Cow," Dr. A. Babb; "Pneumonia," Dr. S. S. Baker; "Some Diseases of the Hock," Dr. W. J. Martin; "Soundness and Lameness," Dr. A. G. Alverson; "Bovine Tuberculosis," M. R. Trumbower; "Transmission of Disease," A. H. Baker. Many valuable points in therapeutics were brought out by the essayists and the excellent discussion.

The following were elected to membership: H. A. Pressler, Fairbury; A. J. Savage, Litchfield; E. S. Fry, Naperville; and Olof Schwarzkopf, Dean of the McKillip Veterinary College, Chicago.

The election of officers for the coming year resulted as follows: President, M. R. Trumbower, State Veterinarian, Sterling; Vice-President, J. L. Tyler, Chebanse; Secretary, Albert Babb (re-elected), Springfield; Treasurer, R. G. Walker, Chicago; Board of Censors: T. J. Gunning, Neponset; W. J. Martin, Kankakee; and Joseph Hughes, Chicago Veterinary College.

On motion, Galesburg was selected as the place for the next meeting, which will be held in about six months.

ALBERT BABB, A.B., M.D.C.,
Secretary.

WESTERN IOWA VETERINARY MEDICAL ASSOCIATION.

THIS Association met, pursuant to a call of the Secretary, in the room of the Sioux City Scientific Association, on November 26, 1895, with President Millar in the chair. Members present: Drs. H. Shipley, G. E. Armstrong,

C. J. Hinkley, P. F. Gaunt, J. J. Millar, and G. A. Johnson, with G. J. Ross, M.D., and C. R. Mock as visitors. During the routine of business Dr. Johnson presented a draft of a bill for legislation controlling milk and meat inspection in the State. After a discussion, entered into by all the members present, the Secretary was instructed to draft a set of resolutions that it is the sense of this Association that such a bill should become a law, and forward the same to the Legislature when it shall have met in Des Moines.

Dr. Johnson then presented a paper on "The Technique of the Tuberculin Test,"¹ which was discussed by all present. Dr. Gaunt presented a report of an outbreak of rabies, which elicited a full discussion by all present. The meeting adjourned to meet at the call of the Secretary.

P. F. GAUNT, Secretary.

Per G. A. J.

CONNECTICUT VETERINARY MEDICAL ASSOCIATION.

THE regular meeting was held at the office of Dr. James Kelly, in New Haven, on the evening of December 3, 1895. The following answered to roll-call: Dr. Bland, of Waterbury, President; Drs. Ross, Kelly, Whitney, Lynch, and Isaacs, of New Haven; Prophett, of Bridgeport; Stoops, of Willimantic; Beckley, of Meriden; and Eliot, of Ansonia.

After the reading of the minutes of the last meeting a communication was read from Dr. Gardner, of Hartford, stating that he would be present at the next meeting and give the members a *résumé* of his labors with tuberculosis during the past year, and comprising statistics from a large number of herds, not only in this State, but also in Massachusetts and New York.

After the routine business was finished and in the absence of Dr. Potter, who was to read a paper on "Horseshoeing," Dr. Bland gave a detailed account of the operation of arytenectomy that he and Dr. Harger, of Philadelphia, performed on a horse in Waterbury.

Dr. Storrs told of several operations of cuneotomy that he had performed. He stated that 50 per cent. of his cases made good recoveries. Dr. Ross stated that about 75 per cent. of his operations for the same trouble were satisfactory.

After the meeting adjourned supper was served at Henkline's.

H. W. ELIOT,

Secretary.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THIS Association held its regular monthly meeting at Broad and Filbert Streets, Philadelphia, on Tuesday evening, December 10, 1895. President Hart called the meeting to order and Secretary Rhoads called the roll, the following members responding to their names in addition to the officers: Messrs. Goentner, Hoskins, Kooker, Lintz, Pearson, and McAnulty. Dr. George B. Rayner, of Manayunk, was present as a visitor.

Dr. Hoskins, on behalf of the State Board of Examiners, said that at the recent meeting of the Board officers had been elected, the plan of

¹ Will appear in February number.

examination considered, and that all applicants would be compelled to undergo an examination, except those who had passed such an examination by Boards of other States, and these would be discretionary with the Board. The first examination would be held at Philadelphia on December 16, 1895.

The failure of the Governor to appoint a State Veterinarian, and thus complete the State Veterinary Sanitary Board, was severely commented upon by a number of those present, and all were urged by the chair to use their influence in obtaining this much-to-be-desired end.

The death of Dr. W. U. Custer, of Reading, was feelingly referred to by Drs. Hoskins and Kooker. After a general discussion of various matters the meeting, at 10.30 P.M., adjourned.

SCHUYLKILL VALLEY VETERINARY MEDICAL ASSOCIATION.

A MEETING was held at the Board of Health rooms, City Hall, Reading, December 18, 1895. The meeting was called to order at 10.30 A.M., President S. G. Burkholder in the chair. In the absence of Recording Secretary Dr. Fridirici, of Tamaqua, Dr. Noack acted as Secretary. At roll-call the following members responded: Drs. Burkholder, Denver; McCarthy, Fegley, Pottsville; Noack, Reading; Kershner, Fleetwood. The minutes of the last meeting were read and approved.

The Secretary then announced the following applications for membership: Drs. A. R. Potteiger, Selinsgrove; Marsh L. Brackbill, Reading; U. S. G. Bieber, Kutztown. A recess of about ten minutes was then taken that the Trustees might examine the applications. In the absence of Drs. Faughman and Snyder the President appointed Drs. Fegley and McCarthy. Having duly examined the applications Dr. Noack favorably reported the candidates. After balloting the candidates were elected to full membership. After discussion about printing or lithographing the certificates, on motion of Dr. McCarthy and seconded by Dr. Burkholder, it was concluded to have them lithographed and to leave the affair in the hands of Dr. Noack.

Then the matter of meat and milk inspection was entirely discussed, and, in the absence of two members of the Committee on Legislation, Dr. Noack moved that the resolution should be referred to the committee and presented before the next meeting; carried. It was decided to hold the next meeting again at Reading, in the same room, on March 18, 1896. At 12 o'clock a motion was made to adjourn for luncheon and to reassemble at 1.30 P.M.

The afternoon session was called to order at 1.30 P.M. The President called upon Dr. Kershner to read his paper on "Obstetrical Operations." After finishing a lengthy discussion followed by all members present. Dr. Burkholder then read a paper on "Inoculation." The writer showed in his able paper very interesting points of the new treatment of diseases. After discussion the Society, on motion, tendered their thanks to the writer for his valuable contribution.

The following subjects were assigned to be read at the next meeting: "General Pathology of the Lymphatic System," McCarthy; "Mange," Bieber; "Spavin," Brackbill.

Meeting adjourned at 4 o'clock P.M.

OTTO NOACK,
Corresponding Secretary.

ONTARIO VETERINARY MEDICAL COLLEGE SOCIETY.

THIS Society, in connection with the Ontario Veterinary College, has held several meetings during this session, and a number of interesting and valuable papers have been presented. The officers are: Andrew Smith, F.R.C.V.S., President; H. R. Ryder, Secretary; T. V. Simpson, Assistant Secretary; G. R. C. Marriam, Treasurer; R. F. Hoadley, Librarian.

H. R. RYDER,
Secretary.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

THE annual meeting will be held in Madison, Wednesday, February 5, 1896, at 1.30 P.M. Programme: "Shoeing," Dr. E. L. Morgenroth; "Scientific Breeding," J. R. Kelso; "Equine Relapsing Fever," T. W. Watson; "Veterinary Meat-inspection by the State and its Necessity," G. Ed. Leech; "Professional Ethics," J. P. Laws.

The meeting of the State Agricultural Society will be held the same week and excursion rates will be given by the railroad companies.

You are cordially invited to be present at this meeting.

J. P. LAWS, President,
309 E. Main St., Madison, Wis.

W. G. CLARK, Secretary,
Beaver Dam, Wis.

AMONG other attractions at the annual meeting of the Michigan State Association, on February 4th, at Lansing, will be to have practical demonstrations of the "Operation for Roaring," "Spaying," "Castration of Cryptorchids," etc.

PROCEEDINGS FOR THE YEAR 1894-95 OF THE SO- CIETY FOR THE STUDY OF COMPARATIVE PSY- CHOLOGY IN CONNECTION WITH THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE OF THE MCGILL UNIVERSITY, MON- TREAL.

To economize space it may be stated that the Society's meetings were held at intervals of about two weeks from October to March, inclusive, in the lecture-room of the Faculty, and that the President, Prof. Wesley Mills, M.D., D.V.S., etc., presided at each meeting.

The Society met for the purpose of electing officers for the year 1895, the President, Dr. Wesley Mills, occupying the chair. The following were elected: Honorary President, Dr. Duncan McEachran; President, Dr. Wesley Mills; First Vice-President, Dr. M. A. Dawes; Second Vice-Presi-

dent, Mr. Sherman Cleaves; Secretary-Treasurer, Mr. C. A. Boutelle; Corresponding Secretary, Mr. A. Cowan; Press Reporter, Mr. Harri Dell. Twenty new members were nominated for election at the next meeting, at which Dr. Dawes will deliver the inaugural address. The Honorary President, Dr. McEachran, and the President, Dr. Wesley Mills, addressed the meeting, stating the objects of the Society, pointing out the field for research and the necessity for individual observation. Mr. C. H. Zink read a paper published in *Forest and Stream*, describing the extent to which a certain retriever was able to understand human language. The writer based his conclusions upon original and careful investigation of the psychic phenomena manifested by his canine companion. A list of words was given, the meaning of which the animal appeared to thoroughly understand. The paper was well written, the subject handled in an unprejudiced manner, and proved of exceeding interest to those present.

The Society, which is in a flourishing condition, consists principally of professors and students of the Faculty of Comparative Medicine, having for its object the study of the psychic phenomena of the lower animals. The Society possesses a small, but valuable, and increasing library pertaining to psychology and kindred subjects.

After routine general business, the Society proceeded to the election of new members, twenty being added to the roll.

Concerning the prizes offered, it was agreed that all those in competition for the same should be in the hands of the Secretary for transmittal to the committee on or before March 1, 1895.

Dr. M. A. Dawes then delivered the inaugural address, in which he pointed out the practical applications of a knowledge of psychic phenomena. In investigating these phenomena, we would, at the same time, be increasing our powers of observation in health and disease. Thus a knowledge of comparative psychology would aid us in clinical examinations, and, furthermore, lead us to a more kindly treatment of our animal friends.

Mr. C. H. Zink then read a paper, published in the *American Naturalist*, on the "Habit of Amusement in Lower Animals," in which were described the peculiar postures and behavior of animals low in the biological scale. The writer had seen tiny *rhizopoda* chasing each other around as if in a game of "tag," also *rotifera* dancing by themselves. He had also witnessed the meeting of two snails, who performed a series of peculiar motions, bowing their heads and waving them from side to side. The movements described were thought to be in no way connected with mating, because having examined swarms of *diptera* dancing in the sunlight, also forms of *coleoptera* engaged in playful gambols, the author found them in each case to be females. He also described the apparently malicious sport of a certain *pulex irritans* with a sleeping comrade, and expressed himself as convinced that "every animal at some period in life has a true appreciation of psychical amusement."

After the reading of the paper the President stated that he had himself witnessed actions among the *rotifera* and other minute forms of animal life which indicated what, in higher forms, we would call exuberance of animal spirits.

Mr. Inglis then read a paper, published in the *American Stockkeeper* and copied by that journal from the *British Fancier*, on the subject of "Dogs

and Music." The physiological effect of music was described. In the opinion of the writer, dogs first fear, then become interested, and finally acquire a liking for music, preferring a reed instrument to a stringed one. They are exceedingly sensitive to discord, one case in particular being cited of a dog in Darmstadt which, while appearing to enjoy music, gave vent to dismal howls whenever a discordant note was sounded. An experiment at the London Zoölogical Gardens, with a violin, was described, showing the difference in the development of the musical sense in different animals. Wolves were terrified, as were also the jackals, but in a less degree, while the foxes and dingoes appeared to experience at first painful followed by pleasurable sensations. The attachment of shepherd dogs to the strains of the bagpipes was also noted, and the question raised of the influence of music on sick dogs.

In the discussion which followed, Mr. Zink criticised the opinions of the writer, directing attention to the difficulty, owing to obvious conditions and circumstances, of arriving at positive conclusions regarding the effect of music on the lower animals. The enlivening effect of music upon melancholy had been experienced probably by most of those present.

Dr. Baker suggested that experiments relating to the effect of music on the lower animals in disease be carried out in the college hospital.

While the lower animals, as a rule, do not produce music, it is evident that in many cases they appreciate it. The subject of street music arose out of the discussion, and it was thought by the President that while, as a rule, it was not of a very high order, still it is not without its beneficial psychic effect on a class of people who are unable to hear better.

After further remarks by the President, the Society adjourned.

Subsequent to the reading of the minutes of the previous meeting, roll-call, and the transaction of general business, the members listened to a paper on the subject of "Fear," by Mr. C. H. Zink. After referring briefly to the physical phenomena of fear, as witnessed in the exhibition of palpitation of the heart, the inhibition of respiration, and the changes in the secretions, etc., the writer dealt with the psychical aspect of the subject. The manifestations of fear in the higher forms of animal life would naturally be most complex, and relatively decrease in complexity in the lower forms. In the amoeba, the nearest approach to fear lies in its irritability, such as is displayed when pricked by a needle. While the term fear cannot be applied to this irritability, it is probably a forerunner of that emotion. This protoplasmic irritability was compared to the apex of an inverted pyramid, of which fear was one of the stones resting thereon. With extension and differentiation not only can fear be accounted for, but many other physical phenomena. Animals low in the biological scale receive impressions by direct contact or chemiotactic influences; then, progressing up the scale, we find developing special senses, each succeeding one being more complex. In insects, sight is an important factor in producing the element of fear; in fishes, a noise or light will cause them to scatter in all directions with apparent alarm; in birds with higher development, fear becomes more complex and easily recognized, while in mammals this complexity is greatly increased. One can now differentiate between curiosity, alarm, fear, and terror, even to loss of consciousness and death, these terms being, in the opinion of the writer, merely degrees or gradations of fear. The value of

fear to animals, the cause and conditions under which it was manifested, were next considered. Throughout the entire animal kingdom, fear prompts the organism to escape from threatened danger, whether this escape be effected by locomotion, feigned death, or any other strategic mental measures. The causes of fear were summed up to be "a knowledge of danger, derived by the animal from the means at its command, and depending, therefore, on the complexity of its development." The writer had witnessed the feigning due to fear on the part of a very young calf, and contrasted this fact with the anecdotes, as told by Arctic explorers, of the curiosity and lack of fear as displayed by seals. With increased complexity of the nervous system is a corresponding complexity of conditions, and in addition to the psychical phenomena previously mentioned, we find changes in the circulatory, motor, and sensory organs, paralysis, loss of consciousness, and even death. It was thought that the unknown, rather than that of which the animal is cognizant, is most productive of fear. In some animals curiosity is excited; this leads to investigation, and this, while adding in a sense to the knowledge in general, leads to a realization of much that is unknown, and the animal fears. Fear, then, is the shock to the directing part of the organism resulting from environmental influences to which the animal is unaccustomed. "When the first molecule of matter became imbued with the breath of life there was something—shall we call it environmental?—which, causing variation, joined with natural selection and survival of the fittest, made improvement possible, gave an opportunity to grow, and in this provision we see the origin of fear and all other emotions; in fact, all mental phenomena."

An animated discussion followed the reading of the paper. The President referred in eulogistic terms to the original and scientific treatment of the subject by Mr. Zink. Mr. Thurston asked how the writer would explain the feigning of the calf which had been referred to in the paper. This fear and feigning were thought to be due to instinct. The President, however, thought that no instinct is perfect without experience, and that instinct in the mind corresponds somewhat to reflexes in the body. Cases of hereditary instinctive fear of bears in horses were related by Messrs. Hart and Parker. Mr. McKeracher reported an instance of a mare becoming restive from no apparent cause until a bear was discovered in the vicinity. Mr. Hilliard had known of cattle greatly excited and unwilling to proceed along a road which had been crossed by a bear half an hour previously. In these two cases fear was evidently produced through the sense of smell. Mr. Ness related an interesting case of some horses confined in a field showing great fear at the sight of a bear being led along the road, but, strange to say, the young colts appeared to exhibit only curiosity. Mr. Dell had seen terror produced in a horse at the sight of a black sheepskin, although the animal was not afraid of the skins of other animals. This was supposed to be due to the law of association, the animal having, probably, at some previous time, been frightened by something of a similar nature.

After further remarks by the President, the Society adjourned to meet again in two weeks.

After roll-call and the reading of the minutes of the previous meeting, the President announced the receipt of several new works bearing on psychology and anthropology, which were added to the library.

The Society was also presented by Dr. Mills with copies of some of his

own works, including a paper read before the Royal Society on "Squirrels, their Habits, and Intelligence, with special reference to Feigning."

Mr. E. C. Thurston read a paper on "Instinct and Intelligence of Animals," in which he clearly defined each of these terms, claiming that a definite line of demarcation might be drawn between them. Many actions of the lower animals have been ascribed to instinct, but on careful investigation one is obliged to admit, however unwillingly, that they possess a mind capable of limited degree of reflection and comparison, and are able to draw conclusions from facts considered. The great barrier to a more complete understanding of the psychic nature of the lower animals lies in the fact that they lack, almost entirely, the power of speech. The same tests, however, which prove the intelligence of the child before it has learned to speak, will demonstrate, when applied to the lower animals, the existence in them of a similar power of comprehending the meaning of words. The intelligent actions of the terrier "Jack," an attache of the college, were next referred to in detail, it being clearly demonstrated that he was able to communicate his wishes to those around him.

Mr. E. H. Lehnert followed with a paper on "The Relation of Reflex Action to Instinct." A reflex act in its simplest form is a single act, *e.g.*, contraction following upon a single irritation. This simple form of reflex, giving rise to the lowest form of psychical activity, would therefore approach nearest to machine-like action. The reflex act proper occurs only in those animals possessed of a nervous system, those which are not mere masses of irritable and contractile protoplasm. While the simpler reflexes may be physical processes, the higher ones involve a complex series or combination of physical processes and have psychical equivalents, physical acts being associated with complex psychical processes, the dividing line between physical and psychical life cannot always be clearly defined, and must in a measure be arbitrary. The life-processes in the highly organized animal were shown to be regulated reflexes, and might be far removed from instincts which were "the result of accumulated experiences along certain lines." The manifestations of instinct in the fly-catcher in the nest were referred to in support of this statement. There can be no doubt that the more frequently psychical states occur in a certain order the more inseparable they become, and also that this tendency, even in a slight degree, may be hereditary, and we will see that instinct is the product of accumulated experiences; for if the experiences of the species remain the same, each successive generation will transmit to offspring a somewhat increased tendency, and this tendency will ultimately result in an automatic relation between the nervous action and external influences perpetually experienced. If then some change takes place in the environment so that new external relations are brought to bear on the animal, and the organism be susceptible to these, a new series of psychical states will arise, at first being a reflex, and later by generations of repeated experiences the tendency becomes organic or automatic, and hence an instinct.

A short discussion of the papers followed. Mr. Zink felt that the popular idea of instinct had received a severe blow by the arguments brought forward in Mr. Thurston's paper. The President explained the uselessness of attempting to train dogs for the field unless they possessed at least an element of hunting instinct. He referred, however, to the case of a St. Bernard and a setter which had learned by imitation to catch vermin, but in

all dogs there is the original tendency to hunt, though in some latent. An inquiry from Mr. Baldwin as to the extent to which a dog might really understand the meaning of words evoked an animated discussion, in which several of the members took part.

At the request of the President, Mr. Thurston read an article from the *Dog Fancier* on "Animal Psychology (a protest)," in which the writer expressed his peculiar convictions on the subject. This writer is agnostic as to dogs' reasoning, etc.

Mr. Zink read a recent article from the pen of Mr. George Mivart on the "Distinction Between the Human and Animal Mind," but owing to the lateness of the hour the discussion of these papers was deferred until the next meeting.

A letter was read from Mr. E. K. Whitehead, of Denver, Col., confirming the statements in the "Tale of a Dog," which appeared recently in *Forest and Stream*. The photograph of this remarkable animal was exhibited to the members, after which the meeting adjourned.

(To be concluded.)

NEW YORK COUNTY VETERINARY MEDICAL ASSOCIATION.

THE regular meeting was held on Tuesday evening, December 3, 1895, at 8.30 o'clock, with the President, Dr. Huidekoper, in the chair. On roll-call, the following members responded to their names, viz.: Drs. Amling, Bieser, Bretherton, C. C. Cattanaach, J. J. Cattanaach, J. S. Cattanaach, J. S. Cattanaach, Jr., Dickson, Delaney, Dair, Ellis, Ferster, Farley, Giffen, Gill, Glover, Huidekoper, Hanson, Jackson, Johnson, Knott, Loomes, Lellman, Machan, MacKellar, Neher, O'Shea, Parsons, Ryder, Richards, Sielman, Turner (32). The minutes of the last meeting were read and approved.

Dr. Gill, chairman of the Board of Censors, reported that the charges against Dr. S. K. Johnson, not being in writing, were not made in the regular order according to the by-laws, and were referred back to the Association. The charges against Dr. R. W. Finlay were laid over until the next meeting for further evidence. Moved and seconded that the report be accepted. Carried.

Dr. F. W. Turner read a short paper on the necessity of having ambulance-service, etc., for Harlem, and suggested several very material improvements and changes that ought to be recommended to the American Society for the Prevention of Cruelty to Animals. A general discussion followed the paper, in which a majority of the members took part.

Judiciary Committee, Dr. O'Shea, Chairman, reported progress.

Committee on Certificates: Dr. Turner, Chairman, stated that the certificates, a copy of which was exhibited, were ready and would be signed and delivered at the next regular meeting. Moved and seconded, that each member's dues and assessments be paid before he could receive the certificate of the Association; carried.

No new members; no applications for membership.

This being the annual meeting, the election of officers for the ensuing year was next in order. Moved and seconded, that a recess of fifteen min-

utes be taken ; carried. Nominations for President being next in order, the following nominations were made, viz., Drs. Huidekoper, Hanson, and Giffen. Moved and seconded, that the nominations close ; carried. For Vice-President, Dr. Thomas Giffen was nominated. Moved and seconded, that the nominations close ; carried. For Secretary, the following nominations were made, viz., Drs. Ellis, Ryder, C. C. Cattnach, and Hanson. Moved and seconded, that the nominations close ; carried. For Treasurer, the following were nominated, viz., Drs. Neher, Parsons, and C. C. Cattnach. Moved and seconded, that the nominations close ; carried. The election now took place with the following result: President, Dr. R. S. Huidekoper ; Vice-President, Dr. Thomas Giffen ; Secretary, Dr. R. W. Ellis ; Treasurer, Dr. C. C. Cattnach. The President then addressed the members and thanked them for the honor bestowed upon him, after which the new officers were introduced to the members, each in turn making a short address.

Moved and seconded, that an Auditing Committee be appointed to examine the Treasurer's report ; carried. The President appointed, as such committee, Drs. Hanson and J. S. Cattnach. After examining the report, they reported the same correct. The report showed a balance in the treasury of \$13.18.

Moved and seconded, that a vote of thanks be extended to Dr. Ryder, the retiring Secretary ; carried. Moved and seconded, that the meeting adjourn ; carried.

J. E. RYDER, D.V.S.,
Secretary.

PERSONAL.

Veterinarian J. Massie, of Kingston, Canada, enjoys the distinction of ranking as captain in the Royal Canadian Artillery.

Veterinarian J. B. Heaton takes an active interest in agriculture in his field of labor. He fills the onerous position of Secretary to the Bloomfield County Fair, Indiana.

Dr. Otto Noack, of Reading, Pa., has removed his office to 529 Cherry Street, formerly occupied by the late Dr. W. U. Custer.

Dr. A. S. Wheeler, of New Orleans, La., has returned from his trip abroad.

Dr. Austin Peters, of Massachusetts, who has been recognized as a commissioned officer in the Bay State Troop, takes a deep interest in the battle for recognition with rank in the U. S. Army, and will be a strong arm of support to the committee this year.

Veterinarian W. L. Burt, of Providence, R. I., has been visiting Illinois and Indiana for the purpose of inspecting horses.

Mr. Harold Sorby, manager of the Pasteur Anthrax Vaccine Co., has removed his headquarters to 315 Rialto Building, Chicago, Ill., where a more central location will afford quicker means of covering the entire country. A supply depot will be retained in New York for the accommodation of Eastern patrons.

Mr. David Roberge, author of a text-book on the *Foot of the Horse*, is giving a course of lectures on "Shoeing" at the New York College of Veterinary Surgeons.

Drs. C. B. Robinson and H. W. Atchison aided very materially the Army Legislative Committee at the opening of its battle in Washington in December.

General Nelson A. Miles kindly accorded the Army Legislative Committee a hearing and gave them much encouragement in the movement.

Dr. W. E. A. Wyman, of Greenville, S. C., a graduate of the New York College of Veterinary Surgeons, has received the appointment of Professor of Veterinary Science at the Clemson Agricultural College, South Carolina.

Dr. Cecil French, of Washington, D. C., spent a part of his Christmas holidays at the seat of his college days, Montreal, Canada.

J. Hugo Reed, V. S., graduate of the Ontario Veterinary College, fills the Chair of Veterinary Science at the Ontario Agricultural College and Experimental Farm at Guelph.

Dr. R. S. Huidekoper filled the rôle of veterinarian to the stock-show at Madison Square Garden in November.

Veterinarians should be beware of one styling himself Dr. Wilson Carriere, of New York City, who is visiting from city to city and calling upon prominent veterinarians for loans of money to enable him to reach his home, when immediate reimbursement will follow, but which fails to follow and all communications are ignored.

Veterinarian H. T. Foote, of New Rochelle, N. Y., will officiate as one of the judges at the New York Kennel Show in February next.

Dr. J. C. Michener addressed the Farmers' Institute at Pottstown on December 18th on the "Health of Farm Animals."

Dr. Frank S. Billings, in the December 20th issue of *Turf, Field, and Farm*, reviews the history of veterinary education in America, and comments upon the relative worth of the two- and three-term schools. He demands a more practical veterinarian.

OF PASSING INTEREST.

Watertown's (New York) second epidemic of typhoid fever has been traced to infected milk, delivered by a dealer who had the disease in his family and had been careless about washing the cans. No less than twenty-five cases occurred on his route, and two or three deaths. When will our cities be preserved from these dangers by a dairy-inspection service by competent veterinarians to guard against these and many other dangers?

The recent stock-show in New York City was a splendid exhibition of stock. The variety and large number of exhibits were well worth a visit by every veterinarian, and must have been a source of great benefit and knowledge to those practising in that city.

Prospective litigation in Pennsylvania by the State Veterinary Examining Board promises to be interesting, bountiful, and we trust successful. Several prospective suits against violators of the act are already under consideration.

A recent suit decided in favor of the plaintiff in the English courts, awarding a verdict of twelve hundred and fifty dollars for depreciation of value of a mare owned by a veterinary surgeon and placed by him in the hands of a trainer, with an express contract that, in the event of any illness or defect of any kind arising in the mare while being trained, the said trainer to immediately inform the owner, who reserved the right to professionally care for her. Negligence was shown in failing to comply with agreement.

Brooklyn has added to her industries an establishment for the preparation of horse-meat for the markets. Bologna-sausages are one of the chief forms of preparation.

Massachusetts seems to be the only State in the Union where the veterinarian is accorded rank in the State militia. Drs. Peters and Osgood, of the U. S. V. M. A., hold place there as commissioned officers. Which State will move next?

A good opening for a competent veterinarian is reported to us at Geneva, Ill. A letter to the Calumet Stock Farm Company, 189 LaSalle Street, Chicago, will afford better information to any of our readers wishing to further investigate this opening.

A large delegation of English stock-raisers recently waited upon President Long, of the Board of Agriculture, imploring him to use his influences in their behalf by preventing further introduction of live-stock from this side of the water. The worn-out cry of contagious pleuro-pneumonia was resurrected, but we feel must have made little impression.

Dr. H. D. Gill, of the New York Veterinary College, was recently interviewed by a reporter of the New York *Recorder* on the scope and character of equine dentistry.

The best method of determining the adulteration of milk seems at present to be in the measurement of butter-fats, and the safest standard one based on the amount of butter-fats.

The methods of conducting the matriculation examinations at the Royal Veterinary Colleges are being strongly criticised, and the subject of severe comment among the several members of the council who direct this work.

Covington, Kentucky, has an Angora cat farm, where a large number of carefully bred cats are raised each year for the increasing demand.

A rabid half-bred Mexican dog recently bit a small boy and a number of pet animals at Columbus, Ohio. Drs. Detmers and Loveberry held autopsy on the dog after its destruction. Cases of this kind have appeared more or less frequently in Columbus, dating back for three years, when a mistaken diagnosis permitted a rabid dog to run at large for a considerable period of time before its destruction.

A recent outbreak of anthrax among London horses was traced to infected oats. A law-suit was the outcome of the results, and damages were awarded by the justice, covering the value of the horses that had died from eating the oats.

Long Island has to-day three horse-meat establishments among her industries.

American beef in London grows in demand daily, and, being cheaper and better than beef grown in England, is largely contributing to its increased sale.

Congressman Hull, of Iowa, has been appointed by Speaker Reed as Chairman of the Military Affairs Committee, which insures to the veterinary profession a warm friend and advocate for recognition in the army.

NEW INVENTIONS.

A knee-spreading device made secure to the shaft and to the horse's leg by a strap at the knee, the connection being a spring-bracket.

A combined feed-rack and trough, with means for adjustment of trough and rack at varying heights.

A powder-blower, working somewhat on the principle of hand-bellows.

A hoof-pad, to be fastened between shoe and hoof, having an unyielding rim of a shape and size to fit the foot; with this a felt cushion over the bottom of the foot, the cushion depressed to allow room for frog, and cushion fastened to a series of rands.

A nailless horseshoe of two sections, pointed at toe and made secure by a series of flanges, with a screw-clamping device at the heel.

A means for analytically recording the gait of horses, consisting of an electrical circuit, with wires to each hoof, arranged to work independently of each other, connected with a battery; the whole arranged to work in conjunction with a vehicle.

A bridle, composed of forked sides, with a bit between lower part, the upper part extending upward continued over nose by a nose-band and backward to over cheek. Also arranged on lower part for adjustable curb.

A device for stopping runaway horses, comprising a pair of pivotally connected jaws, carrying knobs at their forward ends to flank the nostrils.

A thermo-cautery, having a carburetter and cauterizing-point in combination with a blowpipe-torch, adapted to be held adjacent to the point.

A device to prevent feather-pulling in fowls, consisting of a single piece of spring wire, the free ends bent outward and inward to form curved hooks and fastened to the bills.

A horse-hitching device, consisting of a pair of tongs, like metal jaws, so arranged by a handle to open and shut as desired.

A thermo-cautery, with a carburetter and an air-forcing device connected with one end, an arm secured to the other end of the carburetter, having a plurality of air-passages therein.

A toe-weight, consisting of a base-plate fastened to the foot, a threaded stud extending from the face thereof, and a removable screw-weight.

A horseshoe calk sharpener.

An improved horseshoe, composed of two sections and an interposed elastic filling.

A muzzle made in sections, so as to open or shut, and adjusted, whereby the same may be operated.

A letter and message receiver-box, with place on front to write message, and by turning knob the message is placed in box and a blank sheet takes its place to receive others. Also plate to designate the hour of return to office.

An improved artery-forceps, so arranged as to prevent longitudinal movement after locking of the spring.

An interfering-pad, to be adjusted between the shoe and hoof by a tongue, and held in place by a strap around the hoof, partly composed of rubber-tubing.

A currycomb, adapted to bind the shedder rigidly against the comb-bars.

A harness-padhook for fastening pads to harness on various parts of body.

A cushioned horseshoe, partly metal, which is irregularly recessed on the plantar surface to receive irregular shaped particles of rubber, so as to insure a firm attachment between the two parts.

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No. 2.

THE TECHNIQUE OF THE TUBERCULIN TEST.¹

BY G. A. JOHNSON, D.V.M.

THE subject of tuberculosis and its diagnosis is a subject that is demanding more and more attention from sanitarians the world over; and, as all veterinarians should be sanitarians, therefore they are more or less interested in the workings of the test.

It is the unanimous opinion of all leading veterinarians, based upon experiments which have fully demonstrated the fact, that the tuberculin test is the only practical and reliable method of diagnosing tuberculosis in the live animal.

But some may ask, What is the tuberculin test? In reply I would say that it is the physiological action of tuberculin when injected into the system in the proper quantities.

It is needless for me to take up your time with a discussion of the source, composition, and methods used in preparing tuberculin, as these are settled questions familiar to all of the profession.

The test is a thoroughly scientific procedure, very delicate and precise in its action, and, to be attended with success, must be conducted on purely scientific grounds. When properly conducted it is nearly if not quite infallible and of untold value, but when carelessly conducted it is not only misleading in its results, but may be the cause of the spread of the disease and loss of life, by diseased animals being passed as healthy, and of loss by healthy animals being condemned and destroyed, either of which places the test in a false light.

¹ Read before the Western Iowa Veterinary Medical Association, November, 1895.

Two essential factors that enter into the workings of the test are, first, the tuberculin, and secondly, the manner in which it is used. The tuberculin must be pure and of a reliable strength, or the results will of necessity be unreliable. Likewise, if it be not properly used the results will be misleading and uncertain.

Having secured a reliable preparation, the first step on arriving at the place is to determine what animals are to be tested. These should have their usual allowance of grain and water in the morning, and then be placed in the stable and marked for identification. This may be easily done by pasting on to each animal's hip, by means of ordinary flour paste, a small piece of common sheeting cloth upon which have previously been stamped consecutive numbers. Of course, this will not be necessary when the herd is small or known to the operator. Water and feed along toward evening, from 4 to 6 P.M.

Having determined, and stabled and marked, all animals that are to be tested, then begin taking the temperature. This is to be done with the ordinary thermometer, in the usual way, per rectum. It might be well to state here that one should have at least two or more thermometers that will register the same, so that in case of the accidental breaking of one or more the testing may not be interrupted. It is a very good practice to attach a string to the thermometer that is long enough, so that when the thermometer is inserted in the rectum the string can be wrapped around the tail a few times, so that, should the animal have a passage, which is very often the case, the string will hold the thermometer and prevent its falling to the floor and being broken. In case the thermometer is thrown out, it should never be reinserted until it has been properly adjusted, for very often the jar in falling will throw the mercury into the stem so that it will register 105° to 110° , and consequently there would be a faulty reading. This is quite likely to be the case where the string is attached between the bulb and stem of the thermometer.

It would be much handier for this kind of work if the thermometer were made with a bulb or metal ring at the end of the stem, so that a string could be attached there instead of being attached near the mercury bulb, thus necessitating the introduction of the string and knots into the rectum.

Another thing the operator should be prepared with is an old suit of clothes and rubbers, for the work is anything but clean.

As the temperature is taken, be careful to correctly read the register each time, and be as particular to correctly record the reading in a book previously prepared.

The form which I have adopted is somewhat as follows:

No		Breed		Sex of animal	
Age		Weight		Calved when	
Before injection.				After injection.	
Time.	Temp.			Time.	Temp.
Am't injected		Time of injection			
Maximum temp. before injection,					
" " after "					
Higher before or after "					
Average before "					
" after "					
Average		Difference between averages		Average	

The object of taking the temperature before making the injection is to get the normal, or more properly speaking, to get the maximum temperature of the animal.

In order to do this the temperature should be taken at least three times, morning, noon, and evening, but it is better to take it every two or three hours during the day, beginning at 8 or 9 A.M., and make the injection some time during the evening, depending somewhat upon the time one desires to begin work on the following morning, for it is not necessary to take the temperature during the first eight or ten hours after the injection has been made, for in case of a reaction the temperature rarely reaches the maximum height before the tenth hour after the injection was made. Usually from 8 to 10 P.M. is the best time, then one can resume taking temperature at from 6 to 8 A.M. the following morning.

Many, notably the Massachusetts Cattle Commission, according to report for 1894, and the New York State authorities, take the temperature but once or twice the same evening of making the injection.

But I am of the opinion that this is not a scientific or safe method, because of the amount of variation in the normal temperature of cattle during twenty-four hours. We are told that cattle usually register a higher temperature in the evening, but this has not been my experience, for the record of sixty-two

head that I have assisted in testing forty-two head registered the maximum temperature between 8 A.M. and 5 P.M., while but twenty head registered the maximum between 6 and 12 P.M. In the majority of these cases the difference was insufficient to be misleading, but in ten head it amounted to from 1° to 2.2° . For illustration:

	Before injection.						After injection.						Evening.	Maximum.	Difference.
	A. M.	A. M.	P. M.	P. M.	P. M.	P. M.	A. M.	A. M.	A. M.	P. M.	P. M.	P. M.			
	9	10.30	12.30	2.30	4.30	8.30	7.30	9.30	11.30	1.30	3.30	5.30			
No. 12	102.2	101.4	103.4	103.8	102.0	102.3	102.2	102.4	102.8	103.0	102.8	101.6	102.3	103.8	1.5
" 23	102.2	102.6	102.6	104.2	.....	102.0	101.0	102.0	102.8	103.0	103.4	103.0	102.0	104.2	2.2

No. 12. Maximum temperature at 2.30 P.M. 103.8° , or 1.5° higher than at 8.30 P.M. 102.3° .

No. 23. " " at 2.30 P.M. 104.2° , or 2.2° " " at 8.30 P.M. 102.0° .

You will notice that in neither of these cases did the temperature rise as high during the second day as it did during the first day.

But suppose we had only taken the evening reading, which in No. 12 was 102.3° , and at 2.30 P.M. the second day it had registered 104.3° , or 5° higher than what it did register at that hour on the first day, which is quite likely to be the case, even in healthy animals, or in No. 23, whose evening register was 102° , had risen to 104.2° at 1.30 P.M. the second, or the same as it was at 2.30 P.M. the first day, we would have had, according to the readings, a difference of 2° in No. 12 and 2.2° in No. 23, which would be considered a reaction and the animals condemned, yet the animals may have been entirely free from the disease as were these animals, and as a result it would have been held that the test had failed in these two cases; but it would not have been the fault of the theory, or for that matter the practicability of the test, but it would have been the fault of the operator, who had not properly performed his work.

I have only cited these cases, yet I have never tested a herd when there was not one or more similar cases.

In the annual report of the Board of Cattle Commissioners of Massachusetts for 1894 is recorded the following cases:

Page 207: 10 P.M., 102.4° ; following day, 9 A.M., 102.2° ; 11 A.M., 103° ; 2 P.M., 103.2° ; 3 P.M., 104.3° ; 5 P.M., 104.2° . Page 262: 6 P.M., 101.2° ; following day, 5 A.M., 103° ; 7 A.M., 103° ;

9 A.M., 102.2° ; 11 A.M., 102° ; 1 P.M., 102° ; 3 P.M., 102° . Page 263: 6 P.M., 102° ; following day, 5 A.M., 102.1° ; 7 A.M., 103.3° ; 9 A.M., 104° ; 11 A.M., 103.2° ; 1 P.M., 102.1° ; 3 P.M., 102.2° . These animals were condemned, but neither showed tubercular lesions on necropsy. On pages 267, 280, 287, 303, and 307 are recorded similar cases.

Now, in the light of my experience, I am led to believe that had the temperature of these cases been taken four or five times during the first day these errors would not have been made. In this same report, on pages 265, 5 cases; 266, 1 case; 267, 1 case; 268, 1 case; 280, 1 case, and 283, 2 cases are recorded where the maximum temperatures, after injection, registered from 105° to 107° , and giving an apparent reaction varying from 3.1° to 6.9° , which showed no lesions of the disease on necropsy. As these animals were tested at Brighton, where they had but recently arrived, we are led to believe that the high temperatures were due, in part at least, to some diseased condition incident to transportation, and not due wholly to the action of the tuberculin.

This leads to another thought, and that is, do not attempt to test animals that are in a fevered condition, for a rise of the temperature, due to the fever, might easily be mistaken for, and considered as, a rise due to the tuberculin.

Having taken the temperature a sufficient number of times the next step is to make the injection. This is done with an ordinary graduated hypodermic syringe, which has been properly sterilized, then set the gauge on the piston so that no more than the amount wanted can be injected. The exact size of the dose used varies with various operators, some using 3 c.c. of tuberculin solution for an average-sized animal, and more for bulls and large animals. I have always used 1 c.c. of tuberculin solution for every 500 pounds animal weight (approximately). Of course, one must usually use his judgment as to the weight, as it is not practical, if it were possible, to weigh each animal.

Dr. Reynolds, of the Minnesota Experiment Station, has had just as good results when he used 1 c.c. tuberculin solution for every 750 pounds animal weight, but as one is liable to err more or less in estimating the weight, I am inclined to favor the 1 c.c. for every 500 pounds animal weight.

One can during the day form his estimates of the weights of each animal, and from that form his dosage and mark the same in his record book.

It might be well to state here that each syringe should be tested, so that its graduation will be correct.

If you have any number to inject you should have two trustworthy assistants, one to make the injections, the other to read off from the record book the previously prepared dosage for each animal, while you fill the syringe and set the gauge.

In this case you should have at least two syringes and a good supply of extra needles, so as not to be delayed in case of accidentally breaking one or more.

It does not matter much into which part of the body the injection is made, but usually the shoulder is the most convenient, and, considering the ease with which cattle use their hind feet, it is the safest.

The one making the injection walks up to the side of the animal, and, if it be not too large, leans over the animal and pinches up the skin of the shoulder on the opposite side with one hand, and introduces the syringe needle with the other, being careful not to push the needle into the muscular tissue underneath, for then the animal will not stand quiet, which it will usually do if the needle be properly introduced.

A point that always demands careful attention is the needle, that it does not become clogged, and thus forcing the tuberculin out at the coupling or up the barrel of the syringe past the piston. This mishap can be easily remedied if it is noticed at first, but could not if the same needle had been used in two or three animals before it was noticed, for it would not be known whether one or more had missed the injection, consequently the syringe and needle should be examined after each injection.

Having finished making the injections nothing further need be done for eight to ten hours; then the cattle should be put in as near the same condition as they were on the first day, and the temperature readings be continued at intervals of two to three hours for eight to ten hours. Thus, if you begin the second day at 6 to 8 A.M. the readings and their records should be continued until 5 or 6 P.M.

In case there should be any marked difference, either a rise or fall in the temperature at any time during the testing, it should be taken a second or third time so as to correct any error. As the work progresses the second day you will be able to derive correct conclusions, as all the animals showing a rise of 2° or more are said to have reacted and are diseased, and should be condemned.

There may be said to be more or less question as to just what constitutes a reaction. What we are to understand as a typical reaction is where there is a gradual rise in the temperature on the second day, from normal in the morning to a height of 2° or more above the maximum of the first day, and then a gradual falling to the normal; for illustration in Bulletin No. 7 of the Bureau of Animal Industry, Washington, D. C., page 63, animal No. 316, we find the following record:

Time	A. M.	A. M.	A. M.	M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.	P. M.
	9	10	11	12	1	2	3	4	5	6	7	8	9	10			
Before 1st day	101.3	101.4	101.6	101.8	101.6	101.6	102.2	102.6	101.4	101.5	101.4	101.6	101.4	101.2			
After inj. 2d day	101.4	101.4	100.6	101.0	101.3	101.4	101.6	102.4	102.0	102.6	103.2	103.7	105.3	105.9			
Time	P. M.	M.	A. M.	A. M.	A. M.	A. M.	A. M.	A. M.	A. M.	A. M.	A. M.	M.	P. M.				
	11	12	1	2	3	4	5	6	8	9	10	12	1				
Before 2d day	101.5	102.8	100.8	101.3	101	100.8	101.8	101.5	101.4	Inj.	.....	.....	.....	
After inj. 3d day	106.2	106.6	105.4	105.2	105	104.8	103.2	102.8	102.7	.....	101.8	102.5	102.3				

This may be considered a typical reaction and is cited because the temperature was taken every hour for the extended period of forty-seven hours, then three times more during the next five ensuing hours, covering in all a period of fifty-two hours. Here we have a gradual rise from 102° at 5 P.M., or, eight hours after the injection, was made, to 106.2° at 11 P.M., or, twelve hours after the injection was made, then a gradual fall in the temperature until the normal is reached at 10 A.M. the following day, or twenty-five hours after the injection was made.

In this case the maximum temperature of the reaction was at the fourteenth hour after the injection, while in a record of eighty-five cases taken from the Bulletin of the Iowa Experiment Station the time of maximum registers varied from the tenth to the twentieth hour, with an average of $15\frac{1}{2}$ hours after the injection, from which we learn that the readings should be continued from the tenth to the twentieth hour from the time of making the injection. But in practice it would not be necessary to follow up the readings later than the sixteenth or eighteenth hour unless there was some appearance of a reaction, by the beginning of a rise which would begin to make its appearance at the sixteenth, or, more especially, the eighteenth hour; nor is it necessary to continue the readings upon animals that have plainly shown a reaction, except you wish to study the reaction, which is advisable when convenient, for in practice a

typical reaction may be said to be the exception rather than the rule.

But in cases where the maximum temperatures of second day is not more than 1° or 2° above the maximum of the first day, it may become necessary to follow up the readings for a longer period of time, and should it then give a typical reaction, although the difference of the maximum may not have been more than 1° , as the following case will show, taken from the records of a test made by Prof. W. B. Niles and myself.

Time	A. M. 9	A. M. 10	A. M. 12.30	P. M. 2.30	P. M. 4.30	P. M. 8.30	Aver- age.	Maxi- mum.
Animal No. 8, before injection . . .	101.8 $^{\circ}$	100.4 $^{\circ}$	103.8 $^{\circ}$	108.8 $^{\circ}$	102.2 $^{\circ}$	114.4 $^{\circ}$	102.7 $^{\circ}$	104.4 $^{\circ}$
Injection made 8.30 P. M. Time . .	A. M. 7.30	A. M. 9.30	A. M. 11.30	P. M. 1.30	P. M. 3.30	P. M. 5.30		
Second day, or after injection . . .	100.4 $^{\circ}$	103.4 $^{\circ}$	103.4 $^{\circ}$	105.4 $^{\circ}$	105.4 $^{\circ}$	105.0 $^{\circ}$	103.7 $^{\circ}$	105.4 $^{\circ}$

In this case the difference between the maximum temperature of the first and second days, also the average of the two days, was 1° , but from the character of the reaction she was condemned, and a necropsy verified the correctness of the diagnosis.

A further analysis of this case showed that the animal registered a very high temperature at 8.30 P. M. the first day, the cause of which we were unable to discover. Some might think that it was the result of an error in the reading, but this is not the case, as the temperature was taken the second time with a different thermometer. And I might here say that I always take a second and sometimes a third reading whenever the readings are out of the ordinary and unusually high, and this should be done, thereby avoiding any errors either in the reading or owing to a false registration of the thermometer. Professor Osgood has noted that in some cases where the disease has reached a very advanced stage, that instead of there being a rise in the temperature there will be a fall, it will gradually drop considerably below normal, and then gradually regain it, in which case the reaction would consist in a lowering of the temperature instead of a rise.

It is not within the province of this paper to discuss the action of tuberculin further than it is concerned in the test, but questions are frequently asked, such as "Will the tuberculin have any bad effects upon healthy animals?" The answer is "No."

In a set of experiments recorded in Bulletin No. 82 of the New York Experiment Station, Professor James Law clearly demonstrated that tuberculin not only has no deleterious results on the healthy animal, but that it has no marked affect on the milk flow. It will not cause any disease when properly prepared. As to its action upon tuberculous animals, we have but little concern further than in its use as a diagnostic agent, yet experiments tend to show that it has very little effect either to aggravate latent cases of the disease or to produce resolution.

Professor E. Klebs claims that by treating the ordinary tuberculin of Koch with an acid solution of soda iodide of bismuth he obtains a solution which he calls antiphthisin that is free from the toxic properties of tuberculin, and that it will destroy the tubercle bacillus, but as yet this theory is in its infancy, and the most we can do is to wait and watch for results.

To recapitulate: The operator should be supplied with a sufficient quantity of a reliable preparation of tuberculin, two or three extra thermometers, one or more properly graduated hypodermic syringes, with extra needles, so that any accidental breakage will not delay the testing. He should also have the proper clothing.

See that all animals are in a proper condition for testing. Then be scrupulously careful in your readings, which should be frequent enough to avoid any errors due to the erratic temperature, and just as careful in recording the results of your work. In short, consider the procedure in its true light, which is a purely scientific one, and conduct it on scientific grounds, and the results will not deceive you.

In making necropsies never give up in despair of finding tubercular lesions until the entire carcass has been completely dissected, for no part of the animal economy is exempt from the ravages of the tubercular bacillus. The lungs and lymphatic system are the most frequently affected, yet if these organs are found free from the disease it does not signify that the animal had been free from the disease, for any of the other organs and tissues may be the seat of the affection.

The only thing lacking in tuberculin to make it an ideal diagnostic agent in the lower animals is that the reaction gives no indication of the extent or localization of the pathological lesions.

UNDESCENDED TESTICLE (IN THE HORSE).¹

BY S. SISSON, V.S.

THIS form of arrested development is frequently seen in our domestic animals, and, while interesting in all, is of special importance in the horse, as it usually interferes materially with his usefulness, and consequently greatly depreciates his value.

It is perhaps unnecessary to go into details as to the anatomical arrangement. Confining our attention to retentio abdominalis, what we find is briefly as follows:

The testicle is usually soft and imperfectly developed. It is enveloped by the peritoneum, which radiates from the testicle in three double folds. The anterior of these (representing the primitive mesorchism) contains the spermatic vessels and nerves. The posterior fold passes backward into the pelvic cavity and contains in its edge the vas deferens. The third one passes outward and downward into the inguinal canal (constituting the processus vaginalis), and contains the gubernaculum testis, presenting on its outer surface the imperfectly developed cremaster muscle. Such, briefly, is the arrangement of the peritoneum, which, of course, is identical with that found in the foetus a short time before the descent of the testicle into the canal. Speculation as to the etiology of the condition would naturally be futile, but it may be remarked that the influence of heredity has frequently been observed.

Recognition of cryptorchism is usually easy, especially if the history of the case is available. The sexual appetite is often greatly exaggerated, constituting satyriasis, and coitus is usually vigorous but unproductive. Some cases become quite vicious, attacking other animals and even the attendant. In exceptional cases, where the animal is old or hard-worked, none of the preceding symptoms may be noticed, especially when he is kept from proximity to mares.

Frequently the head and crest are typically male, but this is far from being constant, notably where both testicles are retained, or where one has descended and been removed at the usual age. Further evidence is furnished by a careful ex-

¹ Read before the Annual Meeting of the Ontario Veterinary Medical Association.

amination of the inguinal region revealing no scar on inspection nor the stump of the cord on manipulation. Sometimes the testicle can be detected per rectum, but if small and soft it is very elusive.

Two operative methods have been practiced, viz., removal through a flank incision or through the inguinal canal. The latter seems preferable in the horse, and is the one usually adopted. If carefully performed the perforation of the peritoneum is very small, very little air need pass into the cavity, and drainage can also be perfectly obtained.

The animal should be made to fast during twenty-four hours preceding operation, or better, a physic ball given two or three days previous, and in the interval a very limited allowance of food and water.

As a matter of course, all possible aseptic measures should be adopted as to hands, instruments, and the field of operation.

It is difficult to describe lucidly on paper methods of casting and securing, but it may suffice to state that the *sine qua non* is to avoid drawing the hind limbs forward. They should be well flexed (hip, stifle, and hock), and somewhat abducted. To secure the latter condition the spreader may be used, but is not essential.

The administration of chloroform is of very material assistance in operating. It abolishes the necessity for particular methods of securing and lessens the danger of prolapse of the intestine.

An incision through the skin and subcutaneous fascia is then made, either parallel to the median line, or, preferably, in an oblique direction, corresponding to the long diameter of the external inguinal ring. In either case it should begin about an inch from the median line and extend three or four inches. If careful the operator need not injure the subcutaneous abdominal artery and large satellite vein.

The external inguinal ring is then exposed by tearing asunder the loose sub-fascial connective tissue with both index fingers. The first and second fingers of the hand corresponding to the side being operated on are then introduced into the canal, where, of course, in many cases the testicle will be found. If not the operator will find instead the small processus vaginalis, which must not be mistaken for the degenerated spermatic cord and tunica vaginalis, and accepted as an indication of former

castration. It may, however, be secured and used as a guide for the fingers in the canal, if unfamiliar with the operation.

Very little force is required in passing up the canal, and the fingers should be closely applied to Poupart's ligament until the point of perforation is reached. This should be made close to the internal inguinal ring, and is best performed by a quick, unhesitating thrust with the index and middle fingers *during inspiration*, as Möller wisely advised.

Manipulation is then made with the two fingers over the surface which can be reached. If the testicle or epididymis is not encountered the fingers must be directed backward and search made for the vas deferens. This offers a characteristic cord-like sensation to the fingers, and its range of movement is quite limited, as it is retained in position by a peritoneal frænum about three inches in width at this part. If difficulty be experienced the assistance of the other hand in the rectum may expedite matters.

When the vas deferens is secured gentle traction on it brings the testicle up to the opening, through which it can be drawn usually without difficulty. It can then be removed in the usual manner, after which the wound may be cleansed, any blood removed, and a few stitches inserted if the tissues have not been bruised much.

It is only in *very* exceptional cases that it becomes necessary in operating to introduce the entire hand into the abdomen, and the routine practice of doing so cannot be too strongly condemned. Where the testicle cannot be drawn outside of the wound, owing to shortness of its peritoneal investment, the écraseur chain can be passed up sufficiently into the canal.

In horses new-growths of the undescended testicle are not so common as in the human subject and dog, but may of course be encountered. Cysts are much more common and, as in these cases, the cyst may be large (Möller records one containing 3xvj of serum), and the testicle very small, they are somewhat troublesome. Degives punctures the cyst with the finger-nail, and then removal of the testicle is easy.

A few cases are recorded in which the testicle had contracted adhesions in the abdomen or pelvis. Such a condition fortunately seems very rare. It would necessitate introduction of hand (and possibly part of the arm), and separation of the adhesions. Naturally the prognosis would be grave.

REPORT OF THE CHAIRMAN OF THE COMMITTEE
ON INTELLIGENCE AND EDUCATION.¹

As a member of the committee there are some living issues that are of vital importance which I wish to review hurriedly.

During the past year one State school and one private institution have passed into history. While we may regret the passing of the one, we cannot mourn over the loss of any little private affair. No strictly private veterinary college in Europe or America has succeeded, and I doubt if any patronage school ever will erect anything like a complete veterinary institution. The writer still maintains that veterinary education, which so vitally affects wealth and public health, should be entirely under the control of the State.

The United States is still blessed with a superabundance of veterinary colleges. One in Iowa, one in Illinois, one in Ohio, one in Pennsylvania, one in Massachusetts, two in New York State, and one for the entire South would more than supply the demand. It seems that all the small men in the profession have gone wild on the necessity of having a place in a college. Make a list of the men on the teaching staff of all the veterinary colleges of America. Now strike out the names of those who are partially or wholly unfitted by education, experience and teaching ability, and it will be seen that over one-half of the total number are men who could not by merit, by natural ability, or by a competitive examination secure the positions they now fill. The faculties of nearly all of the private schools are made up of local men who will work for prestige—a kind of practice prestige.

The question suggests itself as to whether a man can conduct a large practice and at the same time be an efficient instructor or an investigator in a college. A position in the faculty of a private veterinary college may help a man's private practice, but he will certainly fail to elevate the standing and efficiency of the college.

Surprising to most men in the profession, one of the smaller two-year course private colleges now offers a post-graduate course. Is it prepared to meet the demands of post graduates?

¹ Read before the Annual Convention, U. S. V. M. A., Des Moines, Iowa, September, 1895.

If so, let the good work go on. There should be a demand for post-graduate work, for observation and contact with men in practice inform us that there are practitioners sorely in need of post-graduate instruction. A summer post-graduate course by the Veterinary Department of the University of Pennsylvania, or by Cornell as she is to be, would certainly be in order.

During the past two years I have from necessity read much in the catalogues of veterinary colleges. They are so much alike that it must puzzle the young men who peruse them to determine where they shall go to buy their veterinary knowledge. Above all, a college catalogue should give a tabulated statement of the courses of study or lectures. These tables should state the names of the subjects taught, the number of hours daily and weekly devoted to each subject, and how many months each subject is considered. This can be easily done. One can then make an intelligent comparison of the course of lectures in one college with another, or with several others. As the catalogues are now issued it is almost impossible to make a table that would enable this Association to compare the different college lecture courses with one another.

There is some question as to the degree of honesty or integrity in the open and bold announcements and statements made in some of the veterinary college catalogues. For example:

One catalogue states that "the college hospital is one of the finest, best equipped and ventilated in the world."

Another states that "each student will be given every facility to conduct experiments (in chemistry) under the direct supervision of the instructor."

Another catalogue states that the department of chemistry "embraces physics, organic and inorganic chemistry, and toxicology. Each of these branches is abundantly illustrated by the necessary apparatus and experiments, which are performed before the class." This institution has, in fact, a small chemical laboratory, with insufficient apparatus to make up the "necessary apparatus."

The Toronto Veterinary College says: "We deem it unnecessary to give an extended and complicated description of the synopsis of lectures, more likely to mystify than enlighten intending applicants. We merely state that the subjects taught are the same as in the modern European colleges, and all the lectures are delivered specially to veterinary students, the same as in London, Edinburgh, and Paris." How clear and how free

from mystification! And, above all, how far from the facts or the truth are the assertions!

I could multiply quotations from catalogues, showing case after case of entire or partial prevarication or the grossest mystification. Most of these "deviations from the line of moral rectitude" are found in careless and exaggerated statements about what the college can do, its laboratory supplies and capacity, and its comparatively great equipment, buildings, and faculty.

In these extracts I have not sought to place all the most questionable statements before you, but I wish to call your attention to the fact that any and all institutions recognized by this Association should be required to announce the truth in no mystifying form, or be called to account for misstatements. We require the members of this Association to abide by a code of morals. Why should not the institutions which have much more to do with the formation of good moral principles in the majority of the men who make up the profession—why should they not be called upon to advertise honestly?

There is a growing demand for accurate and reliable records in the field of veterinary medicine and surgery. None of our American colleges publish annual statements in their respective catalogues or by special issue, giving a classified list of the clinical cases, of the surgical operations, of the post-mortem examinations, of the number of dissections, and of the cases of internal medicine. Special and full reports should be made of all peculiar cases, of discoveries of any value in pathology, surgery, or internal medicine. If the fountains of learning fail to be scientific, what must we expect of our offspring? I would also urge that each practitioner record every one of his cases and annually report them in some of the medical journals. No complete science will ever be built upon incomplete or unreliable records.

Lastly, I suggest that it is now time for this Association to give some recognition to the agricultural colleges that are so ably supplementing and advancing the veterinary education in the United States. At least a list of the recognized agricultural colleges should be published. A four years' course in the A. and M. colleges that have qualified veterinarians and suitable courses of study should admit a person to the second year in all our recognized three-year course veterinary colleges.

C. A. CARY.

11075

PYÆMIA IN THE DOG.¹

BY HARRI H. DELL.

I HAVE been guided in the selection of my subject for your consideration this evening by a desire to direct your attention to a disease but little referred to in our literature. I was quite unaware of the paucity of information in the text-books concerning pyæmia in the dog until I began to consult the several libraries to which I had access. Later on I will report in detail a case which came under my own observation and following an operation of the most trivial nature.

Pyæmia is a disease characterized by recurrent chills and intermittent fever, with the formation of abscesses in various parts of the body resulting from contamination of the blood by the bacteria of suppuration. The point from which the bacteria and their products are distributed is usually a suppurating wound. Thrombi frequently result, degenerate, and break down, the fragments being carried along in the blood-stream, and thus convey the infection to organs far removed from the original seat of suppuration. The lymphatic system also may convey the infective material to distant organs. The disease is somewhat insidious in nature, and for this reason frequently obtains a foothold upon the animal before it is suspected.

The symptoms which are presented are occasioned by the inflammatory processes and the metastases. Fever of an intermittent type, accompanied by chills, is seen in all cases. The other symptoms vary with the organs most affected, and when we bear in mind the many organs in which the metastases occur, we are not surprised at the complexity of the symptoms.

Both pyæmia and septicæmia usually have their origin in wounds, but cases have been recorded where no wound has been discovered, these apparently idiopathic cases being designated as of spontaneous origin; but, reasoning from analogy rather than with our practical experience with the disease, I think the doctrine of spontaneity no more tenable in this particular disease than in others.

Pyæmia and septicæmia are, I think, the unsuspected cause of much of the mortality following surgical operations in

¹ Read before the Montreal Veterinary Medical Association, November 7, 1895.

veterinary practice. The unfavorable terminations are hastily concluded to be the result of other causes than the entrance into the animal economy of organisms whose potency in the causation of diseases is beyond doubt. Diagnoses are made, but how rarely are autopsies performed to verify the same. To introduce into our practice the conditions of asepsis and antiseptis obtained in our well regulated human hospitals is obviously quite impossible. But do we as practitioners always endeavor to apply as far as possible in our practice the doctrines of Lister? Are we not frequently careless in this respect, and because we cannot easily attain perfect conditions do we not satisfy ourselves with a minimum amount of effort in that direction, and then blindly attribute failure to anything rather than our own carelessness or neglect?

Our English text-books on the practice of medicine and surgery contain descriptions of pyæmia based for the most part on the experiments of Koch, and refer to the occurrence of the disease in horses, cattle, and sheep, but singularly enough no cases are recorded of the disease in dogs.

Our cynological literature also treats but little of the disease. Woodruff Hill is the only one of the many writers I have consulted who refers to the disease. He advises strict cleanliness in the treatment of even small wounds, as "pyæmia and septicæmia may follow carelessness in this respect."

The French works I have had at my disposal give the matter very little notice. Rolle's *Pathologie Morbide* contains a good account of the disease, but makes no reference to its occurrence in the canidæ, and more surprising is the fact that in the *Maladies des Chiens* (a French translation of Hertwig), I failed to find either pyæmia or septicæmia mentioned among the lists of diseases to which the dog is liable. In the *Deutsche Zeitschrift für Thier medicin*, vol. ix., p. 92, pyæmia is mentioned as occurring in young dogs following omphalitis. In the *Monatsheft für Thier Heilkunde*, vol. lv., p. 381, Frohner records a case of pyæmia in the bitch following an attack of endometritis. Rabé in the *Berliner Thierarztliche Wochenschrift*, 1888, p. 65, describes the formation of multiple abscesses due to an organism resembling actinomyces.

The case referred to in my opening remarks was that of an aged cocker spaniel dog, which was brought to the college hospital on October 4th, with the history of having the end of his tail crushed by being run over by a street car. Amputation

was performed at the articulation between the fifth and sixth coccygeal vertebræ. The animal continued in good health, but the local conditions not being satisfactory, it was decided to excise another vertebræ and leave a flap of skin to form the stump. This was done on October 12th. The parts were washed before the operation with soap and water, followed by a 1 per cent. solution of carbolic acid. Hands and instruments were also subjected to similar antiseptic treatment. Excision being affected, the edges of the skin were brought into apposition by silk sutures, the wound dusted with iodoform, and a bandage applied. The wound was dressed on October 14th, and found to be healing by granulation at the upper part, while from the lower there was a very slight discharge of a serous nature.

On the 16th there was no evidence of a discharge, the entire wound appeared to be united sufficiently to remove the sutures. The first symptom of any indisposition that presented itself was anorexia on the morning of the 17th, and then the temperature was found to be 101° F.

At 9 P.M. the thermometer registered 104°, pulse 80, and, as the animal still refused food and appeared to be very weak and depressed, beef-tea and stimulants were administered. On the morning of the 18th the only change in the symptoms was such increased weakness that a fatal issue seemed very near. At 11 A.M. he was carried into the cynology clinic, where he expired before any physical examination could be made.

Dr. Mills, from the history, diagnosed pyæmia or septicæmia, which was verified later by post-mortem examination.

The autopsy was held nine hours after death and revealed the following conditions: Serous cavities dry, intestines distended, serous coats showed reddened patches, but there were no signs of peritonitis.

Spleen: Extending along the middle of the abdominal cavity it was greatly enlarged, congested, soft, with numerous large hemorrhagic infarcts and minute abscess formations.

Kidneys: Enlarged, capsule easily removed, surfaces smooth, pale and mottled, with areas of congestion and hemorrhages. On section showed great fatty degeneration, large white necrotic infarcts, but no signs of multiple abscesses visible to the naked eye. Pelves and ureters injected.

Liver large, congested, fairly firm, without the presence of

abscesses. There were also several small superficial areas of necrosis.

The *intestines* contained much mucus and a specimen of tænia 75 cm. in length. Otherwise no evidence of disease.

The *heart* was normal in size, containing a moderate amount of blood, blue-black in color, and also small quantity of mixed clot. The muscle was firm, deep-red in color, and free from abscesses. Aortic valves were chronically thickened at their attached margins. The right posterior valve had recent dark-colored vegetations upon it, while behind it was a small recent thrombus. The left posterior valve was greatly degenerated, its free margin showing much loss of substance and numerous vegetations. At the attached margin were two deep ulceration, involving the heart substance. There was also slight fusion of the valves.

Lungs: The bronchi were slightly reddened, larger vessels free; otherwise no evidence of pulmonary disease. The brain was normal.

Tail: Extremity presents small sloughy aperture without macroscopic evidence of thrombi.

The articulations showed no traces of abscess formation.

Microscopic examination of organs stained with methylene-blue revealed the following results:

In the *spleen* numerous large hemorrhages and very minute abscesses, and throughout small collections of cocci (apparently staphylococcus pyogenes), evidently of embolic origin.

Kidneys showed a similar condition and also advanced parenchymatous degeneration.

In the *liver* were hemorrhages, old and recent, and areas of necrosis. Cells in the centre of the lobule showed early atrophy. No true abscesses were apparent, but cocci were present in arteries and veins and invading the bile ducts.

The *heart* muscle showed cocci in the capillaries, but no abscess formation.

Tail: A section from the site of the wound showed considerable necrosis, small cell infiltration, together with granulation tissue. The veins themselves, so far as could be made out, did not show, on being stained with methylene-blue, any trace of bacteria in their lumen. Loose thrombi, and some partially organized, were seen in the vessels, but further examination was rendered unsatisfactory owing to conditions under which the tail had been preserved.

Conclusions and Pathological Diagnosis. Death from *pyæmia* following the operation on the tail. Thrombo-phlebitis in the vessels. Acute ulcerative aortic endocarditis with metastatic abscesses in the kidney and spleen capsule, parenchymatous nephritis, necroses in liver.

Interesting Features. It is interesting to notice the virulence of the disease following so simple and trivial an operation.

Further, the very few clinical symptoms are also not what would be expected in a disease making such rapid advances, while again the freedom of the lungs and articulations from abscesses is one particular wherein the disease in this case did not follow the usual course as seen in other animals.

It affords me great pleasure to acknowledge the most valuable assistance rendered me in the laboratory work on this case by Drs. Adami and Martin of the pathological laboratory of the University.

SOME DISEASES OF THE HOCK-JOINT.¹

BY W. J. MARTIN, V.S.,
KANKAKEE, ILL.

THE hock-joint is one of the most important articulations of the equine body, and none is subjected to so many pathological evils as it. This joint has engaged the attention of the veterinary pathologist from remote times, and, from the number of cases of lameness which we meet with in practice, would seem to bear out the correctness of an assertion made to me many years ago by an eminent veterinary practitioner, that 90 per cent. of lameness in the posterior extremities was due to diseased conditions of the hock-joint.

Viewed from the standpoint of a naturalist, the equine tarsus presents many points of interest. The first of these is its complex structure, which is the result of a long period of metamorphosis, or change, in which nature has endeavored to adapt itself to the animal's changed surroundings, due to domestication. We see in those extinct fossil equidæ, which preceded our existing horse family in geological times, hock-joints of very simple construction. For instance, in the family *Hypotherium*, the nearest extinct relative of the present horse family, the joints

¹ Read before the Illinois State Veterinary Medical Association, November, 1895.

are of very simple construction. The small bones in the hock of hypotherium are articulated directly with each other and with the long bones, whereas in our modern horse the small bones interlock each other, and also the long bones, thus forming at the same time a stronger and more complicated joint, one which is well adapted to resist the strain imposed upon it by domestication, but at the same time one which is much more predisposed to the ravages of disease.

The hock-joint presents for our consideration two well-marked mechanical movements, viz.: A true hinge-movement and a gliding movement. The hinge-movement is found in the tibia articulating with the grooved surface of the artragalus. The gliding movement is confined to the cuneiform magnum, medium, parsum, and os cuboid.

The diseases of the hock-joint have been grouped into two grand divisions, viz.: diseases of the osseous structures and diseases of the soft parts, such as the skin, muscles, fascia, ligaments, etc.

Owing to the scope of the subject, which a minute study of the diseases of the hock-joint involves, it is not possible in one short essay to enter fully into a complete description of all the diseases of this joint. I will, therefore, confine myself to a consideration of some of the diseases of the soft parts.

CAPPED HOCK. Beginning at the summit of the calcaneum we find a diseased condition, termed hygroma or capped hock. There are two forms of this malady. The most important one is due to an enlargement of the synovial bursæ, between the gastrocnemius internus and externus muscles. This lesion in some cases gives rise to much pain and lameness. It is usually caused by a sprain or injury from forced efforts at heavy draft or in jumping. The second, or serous, is comparatively simple in nature, and is generally caused by a bruise, such as kicking in the stall or in lying down on a bare plank floor. Some writers mention caries or necrosis of the summit of the calcaneum, though I must confess that this must be of extremely rare occurrence. Other conditions which give rise to enlargement of the joint of the hock are dropsical effusions due to lymphangitis or debility due to wasting diseases.

Treatment. In those cases caused by an injury of any kind, and where there is much heat and pain, and the animal is in full condition, I generally give a mild aloetic purge, followed by salines in the drinking water, such as Epsom salts or nitrate of

potash. I also find great benefit in allowing the animal the freedom of a small yard or box stall. The therapeutic agents to be applied to the hock are of the cooling and discutient order. If in summer pounded ice placed in a sack and adjusted over the os calcis answers admirably. If ice cannot be had cold water may be used, followed by smart hand friction with strong camphor spirits. In the course of a week or ten days after the inflammation has subsided and the effusion still remains, the treatment then to be pursued is one of absorption. For this purpose I find nothing better than the glycerin of iodine solution, made thus :

R.—Iodine et Iodide Potassium āā 3j
 Glycerin Puræ 3ij

Fiat a solution by means of a water-bath and paint the enlargement once or twice a day with the mixture.

This remedy in my hands has succeeded the actual cautery, seton, puncturing with the aspirator, etc. In treating capped hock with this mixture it possesses the additional advantage of leaving no scar or blemish and can be used while the horse is at his work. I am decidedly opposed to the use of the hot iron or seton in treating capped hock, for in many cases we find the areolar tissue and other soft parts indurated and permanently calloused by their use, thereby leaving an unsightly blemish, which would not have been the case if a patient system of absorption had been pursued. Some practitioners inform me that they derive great benefit from the use of a thick pad adjusted over the enlargement, so as to prevent the animal from bruising it in lying down at night.

CURB. From the seat of capped hock we pass downward on the posterior part of the hock and meet with that pathological condition known as "curb."

Definition. Curb is a sprain of the calcaneum cuboid ligament. That the above definition is somewhat dogmatic we must admit, because there is a wide difference of opinion among veterinarians the world over concerning the true seat of this disease. Youatt, Spooner, and many others of the old veterinary authors claimed that it was caused by a sprain of the calcaneum cuboid ligament, while Percivall claimed that it was caused by a sprain or rupture of the synovial sheath between the post annular ligament and the tendon of the perforatus muscle. Prof. Williams says that it is caused by a sprain of the cal-

caneum cuboid ligament, as do likewise Profs. Liautard, Smith, and others. On the other hand, Prof. Pritchard, of the Royal Veterinary College of London, who, we must admit, is a very good authority, says that curb is due to an inflammation of the synovial sheath of the posterior annular ligament and the tendon of the flexor perforatus muscle. In a lecture on curb, delivered before the Lincolnshire Veterinary Medical Association, referring to Prof. Williams's assertion that curb is a sprain of the calcaneum cuboid ligament, he says: "You can call to mind the strength and position of the calcaneum cuboid ligament; it is one of the most powerful ligaments in the body. I have never yet seen it in a diseased condition, except through an injury, such as a kick from a horse. I have never yet seen the slightest trace of disease of this ligament, and if you examine the strength of it you will come to the conclusion that it would be an enormous effort on the part of an animal that could possibly injure it. It runs down the back of the os calcis. It is half an inch in thickness, and is firmly implanted in the cuboid bone, and is strong enough to hang a horse on."

We must admit the position taken by Prof. Pritchard is a strong one, but, in my humble opinion, based upon numerous dissections and years of close observation, his theory is not correct in many cases. I have found well-marked disease of the calcaneum cuboid ligament in curb, and in other cases disease of the synovial membranes, and even of the tendons and os calcis itself, so that it is just as well not to be too dogmatic in regard to the pathology of this disease. In regard to the soundness or unsoundness of a horse having a curb, when the horse is of mature years and the formation of the hock is good, I would have no hesitation in saying that practically such a horse was sound, though technically such an animal could not be considered so. A horse with a bent or so-called "sickle hock" should be viewed with much suspicion, and I do not hesitate to say that such animals are not to be trusted for hard work.

In the matter of curb being an hereditary evil of the horse family, my belief is that a stallion or mare with curby hocks is most likely to transmit the same defective anatomical conformation to their offspring.

Treatment. In severe cases of curb where there is much lameness, together with heat and pain, it is well to allow the animal perfect repose, and use cooling and refrigerant lotions to the hock. After a few days these may be discontinued and strong

camphor spirits may be thoroughly applied with strong hand-rubbing. When the heat and pain have subsided it is well to remove the ordinary shoe and substitute one that is very thin at the toe and gradually becomes thicker backward until at the heels a thickness of an inch and a half has been attained. This relieves the tension on the tendon and ligaments, and at the same time serves to prevent a return of the malady.

As to removing the exudation which may remain, any of the resolvent remedies may be used. Of these I prefer the glycerin of iodine perseveringly applied. In cases of curbs of long standing, in which the parts are much enlarged and indurated, rendering the animal quite lame, I have also derived beneficial results from the compound solution of mercury, made thus:

R.—Hydrargyri Iodidum Rubrum	℥iv
Iodide Potassium	℥iv
Sp. Vini Rect.	℥iv

Sig.—To be applied to the enlargement once a day if required.

In some obstinate cases which refused to yield to the above treatment, I have used the pointed iron with good results.

TRICHINOSIS.¹

By OTTO NOACK, V. S.,
READING, PA.

History. Not only a very painful but also a very dangerous disease is trichinosis. Tracing back history and description we find it to be known to the profession as far back as 1821. Undoubtedly it was in existence long before that time, but was classified and treated as rheumatism, gastro-enteritis, and other diseases with similar symptoms. The following cases will show it: It was recorded by Tuengel, 1851, that during an epidemic at Hamburg, a man inflicted with the prevalent epidemic was treated and recovered. Dying ten years later, his body was dissected, and the muscles found to contain any amount of trichinæ. Zenkel, of Dresden, reports, during an epidemic of typhus, 1860, he dissected bodies having died from the prevailing epidemic, but found no trace of typhus. Instead, he

¹ Read before the Pennsylvania State Veterinary Medical Association, September 3, 1895.

discovered the muscles filled with innumerable trichinæ. In reports from 1821 we hear of a description of calcified bodies found in dissecting a corpse, though most authors deny the identity with trichinæ. Hilton is also credited with having found trichinæ in 1834 in a case at London Hospital, but thought that these calcified capsules had been formed by the existence of small cysticerces. Again, others claim that James Paget was the first to discover the worm in 1835. Be that as it may, this is certain, the great English naturalist, R. Owen, was the first to describe the parasite in 1835, and name it *trichina spiralis*, still known by that name the world over. His description of the worm is unsatisfactory and not properly classified. A better description is found somewhat later in the same year by Farre. In the fourth decade trichinæ were found to exist in various animals—rats, cats; also found to exist in hogs by Leidy, of Philadelphia, in 1846. Hence the liability of trichinæ in man can be proven. But Virchow was the first to give a definite and perfect description of trichinæ. In 1860, in a more complete description, the difference between the trichinæ in the intestines and the muscles was stated. Thirteen years later, Gerlach, one of the greatest veterinarians, gives us a good and definite description of trichinæ and trichinosis in animals, especially in hogs.

Description of Trichinæ. Biology: The trichina (*trichina spiralis*) belongs to the class of nematodes. The trichina has two stages of development, namely, the intestinal and muscle trichina, the latter being the larva of the first. There is a difference of sex, the female growing larger than the male; the former being 3 to 4 mm. in length and 30 to 40 μ in diameter, and can be recognized by the naked eye by a faint yellowish-white line. The male is about 1 to 1.5 mm. long and 25 to 30 μ in diameter. The tail-end has two digital appendages. The genital tube forms with the end of the intestine a reversible cloaca. The female has intestinal and genital organs, ovaries, uterus, and vulva. The external genital duct is situated very far front, between the first and second quarter of the body length. The anterior part is conical-shaped, mouth unarmed, the posterior thin and slightly curved. The intestinal trichinæ is generally found in the small, rarely in the large, intestine. The muscle-trichinæ is always found in the sarcolemma of the striated muscle-fibres, with the exception of the heart. However, Virchow, Leukart, Mueller, and others quote a few cases,

having found them in very small numbers in the muscle of the heart.

History of Development. Whenever partaking of meat that contains muscle-trichinæ, the capsules are dissolved by the gastric juice and the worms become free. After the lapse of two days the worm attains its full growth, according to the statement of Kratz. It is then that the most dangerous part occurs. Copulation takes place, the female becomes pregnant; after five days the first embryo are born. The parturition continues for several weeks, during which time the mother-worm gives birth to more than a thousand embryo. The death of the mother-worm occurs generally after the lapse of from five to eight weeks, passing out with the feces. The young intestinal trichinæ perforate the tissue of the intestines at once, passing through the peritoneal and mucous structure of lymphatic tissue and also the bloodvessels, locating themselves in the sarcolemma, generally near the tendinous insertion of muscles, covering themselves with their chitina, which produces a calcified capsule within two years' time (Gerlach). The elliptic form of the capsule can be recognized by the naked eye as a very fine white spot. Each capsule generally contains one, seldom more worms. According to some authors the worm can attain an age of twenty-five years (Klopsch). This is very doubtful. It takes a temperature of about 160° F. to kill the worm, showing what indestructible vitality the worm has.

How the Disease is Acquired. The only possible way for mankind to acquire the disease is by eating raw or only undercooked pork. The worm in the capsule achieves its active life, being freed from the capsule by the gastric juice of the stomach. How the hogs get trichinæ cannot be positively said. Some authors claim that rats infect the hogs; others, say *vice versa*. Leisering claims if all rats were put out of existence the trichinæ would cease to exist. Of the many instances given we find more in favor of this theory than opposed to it, Leukart and Gerlach being in favor of it. Undoubtedly this is certain, trichinæ can only be obtained by eating any food containing trichinæ. Dogs and cats can only be infected by eating mice, rats, and infected meat. The latter become infected, as Fuerstenberg claims, through human excrements. A whole herd can become infected when one hog has trichinæ, as experiments made by Gerlach and Guenther have shown.

Prevalence of Trichinæ. Besides man trichinæ prevail in the

following animals: Hedge-hog, pole-cat, marten, marmot, badger, hog, cat, rat, and fox. According to Gerlach, horses, rabbits, and guinea-pigs can be infected by feeding it directly, but this cannot be said with certainty of sheep and calves. There are no probabilities of the disease dying out, as it is carried in so many various ways, existing in so many classes of animals throughout the world. Rats eating one another also cause it.

Symptoms of Trichinosis. It is very difficult, almost impossible, for the veterinarian to diagnose the disease, the symptoms not being as characteristic as in man. Generally among cattle the disease is in the last stage before known (Gurlit and Hanbuer). A correct report of the diseased animals cannot be obtained, therefore I will give some symptoms produced by feeding trichinæ, according to Gerlach's report, who thus far has had the best results. The symptoms both in man and animal do not differ much. Reports of producing trichinosis in animals we did not have until the beginning of the eighth decade from experiments made by Gerlach, Gurlt, and Hanbuer, who fed forty hogs of different ages with food containing trichinæ. This experiment showed that all ages are subject to the disease; in fact, the younger have it more severely than the older. The opposite is true in man—children with gastric symptoms being in less danger, making a quicker recovery than adults, although this may be due to having partaken of less food containing trichinæ. Trichinosis can be divided into two stages, intestinal and muscle trichinosis. The first stage diminished, sometimes complete loss of appetite, followed by general signs of sickness. Very soon symptoms with diarrhœa appear, which often causes death in small animals; generally a very marked weakness exists, wanting to rest continually. After ten or twelve days, until the third week, the intestinal trouble disappears. Muscular affections, resembling rheumatism, then appear, with symptoms similar to typhoid fever; stiffness, difficult swallowing, trismus, resembling a case of tetanus; inflammation of the eyes, œdematous swelling of the legs (but not as in man, œdematous swelling of the eyelids), and general marasmus. If the animal recovers all these symptoms quickly disappear. The greater the number of trichinæ the more pronounced and severe the symptoms. Virchow and Pagenstecher claim that the symptoms are not so characteristic as given by Gerlach. The disease is often fatal. If, after thorough examination, suspicion arises that the animal is infected, microscopic examination

must be made, removing a small piece of muscle by means of a muscle-harpoon specially made for this purpose. The autopsy is of great importance, and it is easy to detect trichinosis by the oedematous swelling, complete flexion of legs, and general marasmus. In the muscles are found yellowish spots, the size of a pinhead, more or less, according to the location of trichinæ. Parenchymatous swelling is found on the intestinal organs, heart, liver, and kidneys. Very often bloody extravasations are found on the peritoneum, and sometimes, also, on the intestinal tissues. The appearance of the muscle is changed, losing through the existence of trichinæ the striated consistence, and becoming spotty and lighter. Leukart claims that the muscles become dark red; this may be so in the beginning, but not in old cases, when the muscles change to a grayish red, also to grayish yellow (Eichhorst).

Prophylaxis. Exposure of all pork before eating to high temperature and the use of salt. The first and most important rule is, never to eat raw or partly boiled pork. It should never be eaten in any form whatever unless thoroughly boiled, as the worm resists a very high temperature. The worm is not destroyed by smoking or pickling unless rent into small pieces and adding water (30 gr. sulph. of soda to 1000 gr. meat). Weaker pickling drawing less water and without energetic smoking has no effect whatever; likewise ham and sausage put in *Acetum lignorum*. Salt and smoke used properly certainly are a good preventive (Wolff, John, Tieman).

b. Microscopic Examination. For protection every hog slaughtered should be microscopically examined. The pieces for preparation should be taken from different parts, especially where trichinæ generally locate, for instance, the diaphragm, intercostal, throat, or jaw muscle, also where the muscles pass into the tendons where trichinæ are most frequently found. Small pieces of these different muscles should be taken for examination. If no trichinæ are found the pork is free from the worm and not dangerous to human life. Trichinæ to be seen well should be examined with an objective enlarging 40 to 50 diameters.

c. Slaughtering in Abattoirs. The experience in different countries shows the necessity of meat-inspection, and for thorough inspection the building of abattoirs. Recalling the different epidemics of trichinosis in 1865, in Hedersleben, Thuringia, a town of 2000 inhabitants, 33 per cent. took sick and 101 died

(Krate). In Hanover, during 1864 and 1865, three epidemics prevailed, causing the illness of 300 people. Since 1866 they have had meat-inspection, since then they experienced one epidemic, caused by using pork of one hog that had not been examined (Gerlach). The report by Blasius in Brunswick, in 1882, states that 254 people became sick with trichinosis. Bronardel reports 250 cases in Halberstadt in 1883. Riedel reports 255 cases in Obercuncwalde in 1888. Since then in all larger towns they have (Europe) abattoirs where meat is examined before being placed in the market, and a trichinæ epidemic is seldom heard of. My opinion is that it certainly is wrong and unjust to make a law to have all meat to be exported examined, but not that for the interstate trade. Live-stock inspection by the United States Government, Section 18, reads as follows: "A microscopic examination for trichinosis must be required for all swine-products exported to countries requiring examinations. No microscopic examination will be made of hogs slaughtered for interstate trade, but this examination will be confined to those intended for the export trade, and only at abattoirs which export pork-products to countries requiring a certificate from this government to secure the admission of such meats." To this law, remarks the State Board of Health of Pennsylvania, "the fact is universally known that for a considerable period several of the governments of Europe prohibited the importation of American pork for the alleged reason that much of it was infected with these parasites. In order to obtain the withdrawal of this prohibition the United States Government established a systematic inspection of all pork intended for export to those countries. There is good reason to suppose that about 3 per cent. of the hogs thus examined are condemned. There is no such protection afforded to American consumers, and there is room for apprehension that much even of this condemned trichinous pork, known to be such, finds its way into the home market. Only the honesty of dealers prevents this, and that is unfortunately a broken reed to lean upon." If we add to it the percentage of trichinous American pork, it is, according to Eulenburg, 4 per cent., Billings, 5.7 per cent., we will find the beforementioned remarks of the Board of Health perfectly right, and put to it the reports of trichinosis of the different States from where I got them.

Ontario: No case of trichinosis recorded during the last five years.

Quebec: No statistics thereon which an opinion can be based on the prevalence, or not, of trichinosis in this province.

Manitoba: There has never been a case of trichinosis reported to the Department of Health and therefore no statistics on this subject.

Maine: About six or eight years ago two boys, when butchering hogs on a farm, cut a small piece of pork and ate it. Both boys were attacked with trichinosis, but both recovered. The pork was examined by the State Board of Health and trichinæ were found.

Massachusetts: During the past ten years slight outbreaks of this disease have occurred, in which one or more persons, and in some cases one or two families, have been involved; but no fatal cases had occurred for more than twenty years until February, 1892, when notice was sent to the Board of existence of an epidemic of this character of somewhat alarming extent in the town of Colrain, Franklin County. Here was an epidemic of more than fifty cases, with four deaths, witnessed by three physicians, yet it was not until the second death, and three or four weeks from its commencement, that a correct diagnosis was reached; and it is possible that if there had been no fatal cases the diagnosis of trichinosis might never have been made. The cause was Chicago bologna-sausage. Soon after the occurrence of this outbreak several other cases were reported from Roxbury, with one death. Some of the cases were reported by Dr. C. W. McDonald. The cause of illness in these cases was undoubtedly ham eaten raw or partially cooked. About fifteen persons were afflicted, with one death. As Secretary of Agriculture Rusk has established an official laboratory in Chicago for the examination of pork intended for export a larger proportion of trichinous meat will be sold in the American market and the disease will be likely to prevail to a greater extent than heretofore. What becomes of the pork condemned as unfit to be exported? It is worked into these cheap sausages, which were probably the cause of this epidemic. Figures show that 16 per cent. of American pork is trichinosed (A. Leibert, New York).

Rhode Island: No report was made on this subject. By reference to mortality statistics for the full period of registration of eighteen or nineteen years, only one death recorded from that cause. This death occurred in 1893. Four in one family

were affected. The material ingested was fat pork, bought from a travelling butcher-cart.

New York: Only one outbreak in the past fifteen years in Arietta, Hamilton County. On the 2d of July, 1884, Dr. J. E. Burchick, of Johnstown, stated to the Board of Health that he had in charge several cases of fever of some kind at Arietta, and that there was some doubt regarding the nature of the sickness. Microscopic examination showed trichinæ. Twelve cases of infection, with two deaths. Cause: Raw ham from Chicago.

New Jersey: The Secretary of the State Board of Health states that no separate record of this disease is kept, and that he can remember but few cases for several years.

Pennsylvania, 1885 to 1895: To give an idea of the frequency of this disease it may be mentioned that in the space of ten years the former President of the State Board of Health, Dr. Ed. H. Germer, in his capacity as Health Officer of Erie, detected no less than six instances in and near that city causing several deaths and not less than fifty cases of serious and painful illness. There is no good reason for supposing that it is more frequent in that part of the State than in any other, but its presence constantly escapes recognition. In 1886, during the epidemic at Bethlehem, one death occurred. The Board is at present investigating two deaths in the city of Lancaster recently, supposed to be due to this cause. One case occurred in Reading during the month of August.

Ohio: No report of trichinosis has been issued in this State, but some outbreaks in this State I know from newspaper reports. The last occurred in April, 1895, at Toledo. Of five sick in one family, three died. Microscopic examination showed trichinæ in corpses and meat. Meat came from Chicago.

Indiana: No report of trichinosis there.

Delaware: The State Board of Health did not have such reports.

Tennessee: Only one authentic report of trichinosis made to the Board has occurred in the last ten years. Reported by Dr. McCall Huntingdon, one family of seven persons affected in December, 1885. Cause: Eating the flesh of home-raised meat.

West Virginia: No reports of trichinosis. Secretary is not aware of any death from the disease in this State for years.

Missouri: No reports there.

North Carolina: No reports.

Alabama: Secretary writes that he never heard of a case of trichinosis in Alabama.

Minnesota: No outbreaks have occurred.

Michigan: No outbreaks of trichinosis since December, 1866. A fatal case of trichinosis occurred in Detroit in December, 1866. Five cases occurred in Port Huron in January, 1874, with two deaths, caused by eating salted smoked ham. Several cases of trichinosis occurred near Flint in the fall of 1875. Cases also occurred there in June, 1876. Five cases occurred in Otsego in February, 1877. In one family the members had eaten raw ham. Members of another family ate a small quantity of the meat and were also sick, but recovered without medical attendance. Three cases with one death in Jonia, 1873. Cases with one or more deaths occurred in the vicinity of Jonia in the summer of 1880. Five cases and two deaths in Lansing in January, 1887. Six cases in Virkyville, with one death, in December, 1883. Remarkable in this case that the meat was well cooked. Four cases in January, 1884, in Niles; one death. Four cases in July, 1884, in Cassopolis; one death (rats fed to the hogs). In all cases microscopical examination showed trichinæ.

Our duty, gentlemen, I think, is to work for to complete this law that the lives of our citizens get more protection.

ACTINOMYCOSIS.¹

BY JOHN LATHAM,

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ACTINOMYCOSIS is a granulomatous disease caused by the bacillus actinomyces, which is a minute vegetable fungus said to consist of a conical mass of branched club-like filaments springing from a single cell and bearing spores on their terminal branchlets. Some authorities claim that this fungus is closely allied to that which produces the green mould on damp leather; others think it closely allied to the fungus causing rust and smut in cereals and grasses.

Pathological research is yearly demonstrating more clearly

¹ Read at a meeting of the Veterinary Medical Society of the Ontario Veterinary College.

the mighty part played by microscopic vegetable organisms in the production of disease in plants and animals, the extreme minuteness and retentive vital powers of such relentness foes making prevention and treatment alike difficult and unsuccessful. The use of the microscope has shown us that tuberculosis, anthrax, swine-plague, fowl-cholera, leprosy, etc., are due to microphytes, and among them we include actinomycosis.

How does this germ gain entrance into the animal body? The ox tribe seems to be the most susceptible to infection, and it is generally supposed that the spores gain entrance with the food or water, or may float in the air, and so be inhaled, the disease in some instances having been located in the trachea and lungs. An abrasion of the mucous membrane is considered necessary before the fungus can produce the disease. The necessary abrasion might be produced in some cases by the agent by which it gains entrance, such as barley, acorns, or other rough food.

Symptoms. Having entered the animal and found a suitable culture-ground, which it appears most commonly to find in the region of the mouth, the parasite commences to grow and multiply, and as it does so it destroys to a greater or less degree the natural tissue, with the result that inflammation of a chronic form is set up, and, Nature endeavoring to repair the damage, new tissue, generally of a fibrous nature, is formed. This when in connection with the jaw shows a tendency to become ossified, hence we have an increase in size and weight of the part, while the original tissue may be almost entirely destroyed. If the tongue be the part involved, it becomes enlarged and very hard, losing its pliability, and in virtue of this condition has been called wooden tongue.

After a variable period the morbid process may develop an abscess, and in the resulting discharge will be noticed minute yellow granules, which, when properly prepared and magnified, are found to consist of the actinomycosis cluster in the centre, surrounded by several layers of cells, and the whole enclosed in a fibrous capsule. Pathological changes may go on to quite an extent, and so long as septic germs do not find an entrance, and the functions of the vital organs are not seriously interfered with, the animal may not evince any signs of serious constitutional disturbance, but may continue in good flesh. If, however, the processes of mastication, deglutition, or respiration be inter-

ferred with to any extent the animal will speedily run down, lose flesh, and if left to itself soon die.

The question has been asked in our meetings how long will an animal live when attacked with this disease. I have seen a beautiful two-year-old heifer, weighing 1700 pounds, reduced to a skeleton in less than a year, commencing with a single lump, like a walnut, on the lower maxillary bone, followed by others on the superior maxilla, the radius, and dorsal vertebra. Dr. Rayen, a former graduate of this College, now State Veterinarian of Tennessee, who held the post-mortem, and had the benefit of a good microscope, found the disease in nearly all the internal organs. Her stall companion, which had licked the open abscesses on the head of this heifer, was operated on the same day, having a lump as large as a goose-egg on the lower maxillary bone, which was removed, scraped, and treated antiseptically. In four weeks she was sent to pasture and is still in the breeding-herd, showing no further sign of disease.

Another native cow that also made a practice of licking the first heifer was similarly affected, and her calf, when only seven weeks old, showed a well-defined tumor on the lower jaw. Both cow and calf, being of little value, were not treated, this being as early as 1887, when the iodide of potassium treatment was unknown.

In August of 1891 I had in charge a pure-bred short-horn which developed a lump on the jaw, also a hard, fibrous tumor on the side of the trachea below the larynx. This heifer was treated with iodide of potassium in 5ij doses, morning and evening for a week, when signs of iodism began to show, and treatment was withheld for six days. When renewed iodism came on in five days, a rest of seven days was given, when only half the dose was given for a week, with the result that the tumor on the neck had almost disappeared, while the one on the maxilla had increased in size. During this treatment the animal had the best of care, nice, soft, nourishing diet, liberally salted, thereby getting the full benefit of the iodine without the usual constipation attending its continued use. I then operated on the jaw after Dr. Rayen's plan, the wound healing nicely, and the heifer passed muster in the Chicago Stockyards in December.

Of the 185 animals suffering from this disease in an advanced stage treated by Dr. Salmon on iodide of potassium, 131 responded to treatment. Among them were placed 21 healthy

subjects, which after four months' exposure showed no signs of disease, and post-mortem after slaughter confirmed the diagnosis. On the other hand, it is a well-known fact that in a herd of pure-bred Hereford cattle maintained in Illinois, 75 had become more or less affected in the short space of four years.

At this writing, opinion is still divided as to whether or not this is a contagious disease. While not considering it highly so, I would by all means recommend isolation of affected animals, especially after suppuration is established.

Treatment. In case of valuable animals being affected, excision of the tumors, followed by the iodide of potassium, is the quickest and by far the most satisfactory means of dealing with this disease for both the owner and veterinarian, while for animals of less value we may be governed by circumstances.

The *modus operandi* of iodine in combating this disease is not fully established, some authorities advancing the rather plausible theory that in order to live and increase in the animal body it is found to be necessary that the parasite be surrounded by a certain amount of liquefied tissue; and in virtue of its very strong absorbent properties, especially upon pathological accumulations, the drug thus destroys the germ through removal of the necessary culture-medium.

Is the flesh fit for human food? There are on record nearly 300 cases of actinomycosis in the human family. Dr. William Home, of Janesville, Wis., who has made a special study of this disease, records a case where seven persons were poisoned by eating the flesh from the fore-quarter of a cow suffering from actinomycosis. Knowing this, and also that the spores of actinomycosis are only one-quarter the size of a red blood-corpuscle, and that these spores have been found in all parts of the circulation, unless such flesh is subjected to a heat of 212° (boiling-point), it must be dangerous. In view of the cheapness of prime beef, and value of human life, the rendering-tank seems the proper disposition of affected subjects.

Dr. Robert W. Ellis, of New York City, reports a case of tetanus successfully treated with tetanus antitoxin.

ABSTRACTS FROM FOREIGN JOURNALS.

PROFESSOR HORDAY on "New Instruments" before the Central Veterinary Medical Society, London, England: "I have two ideas, which I believe to be new, and which I desire to place before you this evening. The first is a speculum, or gag, designed to open the mouth of a dog, pig, or other small animal. The method of application is as follows: Secure the patient firmly by the aid of an assistant or on an operating table, and place the closed gag in the animal's mouth, tightening the straps which pass over the upper and lower jaws. When ready to open the mouth, turn the two screws together equally and steadily, and the jaws will be slowly forced apart. It is made entirely of metal and can be kept clean and aseptic; the metal used, termed 'Dorion,' is beautifully smooth and soft to the touch (thus dispensing with rubber coverings, which soon become injured and dirty), and will not corrode or rust in any way. By means of having the rings to slide along the bar it can be made to fit any size of dog or pig. I have given it a thorough test on all breeds, and have found it of great service when wishing to examine or extract the teeth, to remove bones, needles, or other foreign bodies from the mouth.

"The second idea is that of a thermometer marked with the average temperature of the various domesticated animals. For some long time past I have had an idea that such a design would be of service to veterinary surgeons. Those of us who live in large towns are occasionally called in to see animals, such as sheep, pigs, etc., which come more commonly in the range of agricultural practice. If we used the thermometer as an aid to diagnosis, we might pardonably have forgotten that different animals have different body temperatures. Personally, it was for a long time a source of difficulty to me to recollect the normal figures unless I was constantly taking them. •

"For the purpose of obtaining these averages I have been engaged in making observations in different parts of England since March last in order to notice whether extreme of weather, different diets, different districts, confinement or liberty, exercise, excitement, or any other extrinsic cause altered in any way the rectal temperature. The results have been of exceeding interest. I have utilized almost 800 animals and birds, all

apparently in good health, rejecting any that showed the slightest sign of disease, either external or internal. In some of them I have been able to make observations twice daily for a month, in others for four or five days consecutively. In all I have made about 2000 observations, carried out at all hours of the day and night. In each I was careful to use only Kew-tested and corrected thermometer, allowing rather more than the full time of exposure by a watch, as I have frequently observed that ordinary thermometers vary very much (some being about $\frac{4}{10}$ ths or $\frac{6}{10}$ ths too high or too low at certain temperatures).

"Besides my own observations I am indebted to work which has been done by the late Professor Robertson, Mr. Hugh Singleton, Mr. George Armatage, Mr. Fleming, Mr. Stapley, and Mr. William Robertson, also to records of foreign observers, among whom are such well-known names as Colin, Siedamgrotsky, Krabbe, and Wesley Mills.

"I find that many conditions alter considerably the normal temperatures. That in all animals the temperature is slightly lower when they have been at rest for some time than when taken immediately after work. In the evening it is usually from a fourth to an eighth of a degree higher than in the morning, being lowest about 4, to 5 A.M., when the animals have been undisturbed for a considerable time. In the fowl and duck, however, the contrary (as might be expected) is the rule; their temperature being highest from about 10 to 12 midday, and lowest at night when they have been at rest and quiet for some time.

"Feeding causes a rise of temperature, and well-fed animals are always higher than poorly kept ones. In hot weather I have thought that the temperature was slightly higher than in cold weather. I suppose that tissue-metabolism is greater. The temperature of the vagina is generally about $\frac{2}{10}$ ths under that of the rectum; but in taking the two, one after the other, if the animal be excitable, it is possible almost always with a two-minute thermometer to get the last one taken equal to or greater than the first.

"Exercise and excitement each tend to send the temperature up very quickly. There is, however, a limit to the rise of the mercury, beyond which no further excitement will cause it to go. I have made numerous experiments solely to watch this. The time taken, too, for the temperature to come down again is considerable, often almost two hours.

"In confinement the temperature is generally a little less than when the animal is at liberty. This is especially noticeable in dogs, sheep, and pigs. Young animals are always higher than old ones.

"The horse in health, when at rest, varies from 99° to 101° ; at work I have frequently observed it higher. I have placed the average at 100.2° .

"For the cow, dog, and cat I have placed the average at 101.4° . I have frequently sent the dog's temperature up 2° in twelve minutes by sharp exercise, and, even by merely causing him to struggle for three or four minutes (as when placed on an operating table) I have observed it to rise 0.4 and 0.6 of a degree.

"The pig varies very much, this animal is so difficult to catch without excitement and struggling. I have, however, managed to get a number very quietly, especially when feeding. The average here mentioned, 102.6° , considers an adult pig to be from nine to eighteen months old. Old sow pigs will be as low as 100° before food and exercise, and young pigs, if raced about for only a few minutes before securing, as high as 106° . Feeding, too, makes a very great difference to this animal; more so, I think, than to any other.

"In the case of the sheep the same remarks apply, though not quite to such an extent. In confinement a sheep varies from 102.9° or so to about 104° , but when at liberty from 103.2° to 104.8° . Exercise and excitement soon sent them up to 105° and higher.

"The fowl and duck are very easily excited and can readily be induced to show a temperature of 109° , and in one case I twice observed 111° in a healthy duck. Fowls after being at rest for some time range from 105.5° to 107° , but after being at liberty from 106° to 108° , the duck rather higher than the fowl.

"I have also made observations on the ostrich, goat, and other creatures, but did not consider them of sufficient utility to insert here."—Reported in the *Veterinary Record*, December 28, 1895.

THE SIXTH INTERNATIONAL VETERINARY CONGRESS IN BERNE, September 16 to 21, 1895. In our January number we were only able to give the report of the Congress up to the close of September 18th. We are happy now to add a summary of the discussions and resolutions for the remaining days.

The session of September 19th was given up to a discussion of the best means of fighting the swine-plague. A written report entitled "The War on the Swine-plague" was presented by Director Zschokke, of Zurich. Professor Preiss (of Buda-Pest) delivered his report, and after a long discussion the following resolution of Director Zschokke was adopted almost unanimously. "Both epidemics, which are designated as swine-plague and swine-pest are, for practical reasons, to be entered under one common name in the epidemics which are to be fought by the State; they are to be placed under the law requiring that cases be officially reported and are to be entered in the epidemic bulletins apart from bacterial erysipelas. Further methods of fighting the disease will be best regulated by the separate countries in accordance with their laws and the local conditions."

In regard to the worth of inoculation as a preventive against erysipelas in swine opinions differ widely. After a long debate the following motion of Dr. Lorenz (from Darmstadt) was adopted almost unanimously: "Preventive inoculation is an indispensable means in fighting erysipelas among swine."

On the other hand, a second resolution of Dr. Lorenz was accepted by only a small majority: "This Congress takes occasion to call the attention of the Government to, and to recommend that they, by the granting of means, support the application of inoculation as a preventive against erysipelas in swine, and that they, by a supervision of the inoculations and establishment of statistics, demonstrate the value of the different methods of inoculation."

The next subject on the programme was the discussion of inoculation against madness in dogs, both as a preventive and a cure. Dr. Pourtalé, together with Professor Jolyet (of Bordeaux), made a written report in which he stated, as a result of his investigations, that the poison causing madness entirely loses its virulence after it has been weakened by being transferred to goats several times. In the discussion it soon came to light that inoculation in the case of hydrophobia had a rather small number of supporters. After a short debate the following pretty, colorless resolution was adopted: "Congress expresses the wish that all who are interested in experimental investigations will verify the facts which lie at the basis of the results offered in the report in order to pave the way for the introduction of preventive inoculation against rabies in the different European States."

A long report was then made by Dr. Lydtin, of Carlsruhe, on the fourth subject on the programme, namely: The influence of veterinary science on the social development and on the elevation of the well-being of a people. The question was further explained by the author and gave no occasion to discussion or to a resolution.

The discussion of No. 5 on the programme, namely, lung disease among cattle and the report of the results of the regulations adopted in different countries in order to stamp it out, was not brought to a conclusion at the session of September 19th, and was postponed until the following day. In regard to the war upon lung disease (tuberculosis), there were several very thorough and interesting reports. For the United States, Dr. Liautard (New York); for Holland, Denmark, Luxemburg, and Belgium, Thomassen (Utrecht); for the German Empire, Roeckel (Berlin); for France and England, Leblanc (Paris); for Italy, Generali (Modena); for Austria, Sperk (Vienna); for Sweden and Norway, Lindquist (Stockholm); for Switzerland, Hirzel (Zurich); and for Spain and Portugal, Vrrurun y Rodriguez (Madrid). A report in regard to the spread of the disease in Russia was not given, and Professor Persu, of Bukarest, declared that so far the outbreak of tuberculosis had not been observed in Roumania. The very thorough discussion which followed showed that the preponderating majority of the members declared themselves in favor of fighting the disease by killing all animals which are either sick with the disease or suspected of it. This view found expression in the following resolution, in favor of which several resolutions had been withdrawn during the course of the debate, only two voting against it: "The Congress is of the opinion that the infectious lung-plague among cattle can be in a short time completely hindered in its spread if the following regulations are observed in fighting it: *a.* Animals which are sick with tuberculosis should be forever excluded from public traffic of every kind. *b.* As soon as the disease breaks out it is necessary to kill all infected animals as well as those suspected of being infected. *c.* Compulsory meat-inspection should be introduced everywhere." In fighting the lung-plague only a small value was laid upon preventive inoculation. Advantage from the same can only be expected under certain conditions, such as exist, for instance, in the so-called Spoeling District, in the Netherlands, and at present in the Prussian District of Magdeburg. The Congress adopted,

as an addition to the resolution named above, the following motion of Arloing: "Preventive inoculation against tuberculosis can only be of service in infected herds where the stock is often renewed and the effectiveness of sanitary regulations is more or less limited by persistent and unavoidable conditions." During the discussion it was explained that inoculation against tuberculosis had been undertaken only under special conditions which had been established by the authorities, and that no one was allowed to dispense inoculin (vaccine) without the consent of the authorities, as it cannot be intrusted to everybody.

In the session of September 20th, after the discussion in regard to tuberculosis had been concluded, the question of the utilization of the flesh of tuberculous animals and its relation to public health came up. Three printed reports formed the basis of discussion: Butel (of Meaux), "Tuberculous Meats and Public Hygiene;" De Jong (of Leyden), on the "Sterilization of Tuberculous Meat;" Guillebeau (of Berne), "The Utilization of the Flesh of Tuberculous Animals and the Public Health." The discussion on this subject was a very animated one because many, especially the French members, were of the opinion that all animals which were found to be afflicted with tuberculosis should be excluded from all use as animals fit for slaughter without regard to how wide the disease had spread in the body of the animal under consideration. The members from Roumania declared that this practice had been carried out in their land with great strictness.

Butel, who in his report had in general held the same view, favored in the course of his discussion the following resolution, which was offered by several members and carried by a large majority: 1, the flesh (meat) of tuberculous animals is to be subjected to especial regulations; 2, if in the carrying out of these regulations the meat must be confiscated, the owners are to be proportionately indemnified in so far as they have observed the sanitary provisions; 3, meat is to be seized as soon as tuberculous changes through their spread or character cause the same to appear dangerous; 4, meat is to be excluded from all traffic if it comes from an emaciated animal; if it has a bad appearance; if tubercular changes are found in the muscular tissues; if tubercular changes of an essential nature are present on several of the intestines; 5, it is to be desired that tuberculous meat which has been declared fit for use will be put upon sale in certain designated markets with a statement as

to its origin after it has been subjected to an effective mode of sterilization; 6, the Congress utters the wish that the erection of sterilizing apparatus may be aided as much as possible on the part of the governments. General conclusions: The Congress calls the attention of the governments of the States officially represented to the necessity of introducing obligatory meat-inspection. Of the numerous other motions only that of Director Trasbot (Alfort, Paris) was almost unanimously adopted. The other motions were partly voted down, partly not put to vote, and partly withdrawn in favor of Dr. Trasbot's resolution, which was as follows: "The Congress expresses the wish that in every land a commission may be established with the object of clearly defining those cases in which the inspectors of public and private slaughter-houses are to make a total confiscation of the meat when the presence of tuberculosis is established by a section (cutting)."

At the conclusion of the session the report of the commission was heard which had deliberated upon the question of establishing a uniform anatomical nomenclature. The conclusions reached can be summed up briefly in the statement that the "Nomenclator Anatomicus," which was published at the beginning of 1895, and which has been adopted as authority by physicians, is to be the authority for veterinary anatomy also. The names as far as it is necessary, under the supervision of a commission consisting of a German, French, and Belgian anatomist, are to be adapted to the needs of veterinary anatomy, and the result is to be adopted once for all at a meeting of the members of the commission one year before the next International Veterinary Congress meets.

The final session of September 21st was devoted to determining the time and place of the next International Veterinary Congress, and decided that the same should be held in 1899 in Baden-Baden, provided the Grand Ducal government approved the decision. The organization of the Congress is left to the members of the present Congress from Baden, with power to coöperate with other members if necessary.

The proceedings of the Congress were taken by a stenographer and the publication of the report will follow during the winter.

The members of the Congress eagerly seized the opportunity to visit the Veterinary School in Berne, which has been entirely remodelled, and had a chance to become acquainted with the

latest arrangements which have been made to meet all the demands of science and practice. The professors in Berne showed every kindness to the visitors. Opportunity was further given on this occasion to obtain more exact knowledge of the changes which tuberculosis brings about in cattle. This had in one case been shown to such an extremely small degree that only the result of a tuberculin inoculation, as Professor Nocard demonstrated, confirmed the suspicion that the animal was infected with tuberculosis. Professor Degive operated upon two cryptorchids, in which in the first case one testicle and in the second both had not descended into the scrotum. He explained these operations in a long address to the members. The Agricultural Exposition taking place at the same time in Berne gave opportunity to become acquainted with the finest breeds of cattle in Switzerland.

The final session of the Congress took place in Interlaken, whither the members had been carried by a special train and steamer, which was placed at their disposal by the Swiss Federative Council. With this meeting a dinner provided by the same Council was connected, and a great number of toasts were drank in which all gave expression to their feelings of gratitude for the charming hospitality of Switzerland. The hearty intercourse between members of the most different nationalities will always remain an object of pleasant recollection.—Müller: *Archiv für Wissenschaftliche und praktische Thier. Heilkunde*, Band xxii. Heft 1 u. 2.

EXAMINATION OF THE RECTUM FOR DIAGNOSTIC PURPOSES. By Svend Larsen, Assistant in the Veterinary High School in Copenhagen. (*Monatsheft für praktische Thierheilkunde*.)

The inflation of the smaller intestine with air is generally caused as well by the shifting of its position, as, for example, in the twisting of its axis or in the pressing in of the Winslow aperture, as by a stoppage (obstruction) in the smaller intestine. In all these cases an inflated knot in the smaller intestine can be felt by rectal examination, about the shape of sausage and as thick as one's arm. Several of these inflated twists in the intestine are sometimes found, and they lie generally a little in front of the entrance to the pelvis, usually toward the right. The cause of the inflation cannot, as a rule, be determined by an examination of the rectum. A stoppage in the small intestine can easily be felt, and is readily distinguished from a knot

or ball of feces in the rectum. In special cases, however, it should be possible to make a diagnosis of obstruction in the small intestine, as a stoppage, consisting of a sausage-like, doughy body of 8 cm. in diameter, can be felt. If a single inflated knot in the smaller intestine, which stands out prominently and lies lengthwise along the wall of the stomach, can be felt, it points to a pressing in of Winslow's aperture. A lipoma (fatty tumor), with a handle-like excrescence, cannot be easily felt between the distended knots of the smaller intestine. In most cases the distention by the air is probably caused by the shifting of position in the intestine, and this, in connection with the other symptoms, forms an important aid in making the diagnosis.

Sometimes in cases of colic a change in the position of the spleen can be felt without any apparent cause. Under normal conditions the spleen is felt on the left side pretty far toward the front and close to the wall of the stomach. Here the sharp back edge can be felt, and, as a rule, a small part of the surface which faces the middle of the stomach. If the spleen, as mentioned, can be pushed aside, it takes place so that it can be pushed partly further back into the cavity of the stomach, or, what is more striking, partly because its back edge can be separated a little from the wall of the stomach, and feels like a sharp edge standing vertically, which, on being pressed, can be pushed to one side, but which immediately assumes its original position when the finger is withdrawn. It is capable of being pushed aside so far that the fist can easily be inserted between the wall of the stomach and the back edge of the spleen. What causes this shifting of position in the spleen is a question which has not yet been answered; it probably arises in connection with some obstruction (certainly, as in cases of colic), but the obstruction cannot be felt, which is hardly to be expected, since a stoppage which would shove the spleen out of place must lie very far toward the front. It is most natural to think here of overflowing of the stomach, besides it is not impossible that a stoppage in the stomach, like enlargement of the larger intestine, could cause such a shifting. A case which came under my observation not along ago points to the fact that shifting of the spleen can take place, however, without being caused by a stoppage. A horse which was suffering from glanders was, during its last days, examined repeatedly per rectum, because it was feared that it had metastases (transference of disease from

one part to another) in the abdomen (bowels, lower part of the belly). The last examination was made a few hours before the horse was killed. At every examination the spleen was shoved toward the back and so far toward the middle that there was ample room for the fist between it and the wall of the stomach. The post-mortem showed neither stoppage nor anything abnormal in the hinder part of the body.—*Thierärztl Centralblatt*, December 1, 1895.

STERILIZING HAIR USED IN MANUFACTURE TO PREVENT SPLENIC FEVER AND ANTHRACOID DISEASES. At the session of the Lower Austrian Sanitary Council held on November 18, 1895, a report of the Institute of Hygiene in the University of Vienna was read in regard to the results of the bacteriological investigation made upon specimens of hair, which were regarded as the source of infection for several cases of splenic fever (anthracoid diseases), which had occurred in the businesses of the brush manufacturers and the spinners of horse-hair. The institute had made several experiments for determining the best method of sterilization.

The Sanitary Council declared first of all the existence of anthracoidal spores which were found in the places where hair was handled could be taken as an unquestioned proof that they were the cause of the disease in the cases mentioned above. In regard to the precautionary measures recommended by the Hygienic Institute, the Sanitary Council declared, further, that the same demanded the introduction of a series of sanitary regulations affecting the spinneries of horse-hair, the brush manufacturers, and similar businesses, and also obligatory disinfection of hair before it was worked up. It thought, however, that these improvements in regard to the handling of the hair would only have a palliative worth and that a complete eradication of anthracoidal infections in the manufactures mentioned could only be obtained by obligatory disinfection of the raw wares, whether this be effected by means of the action of ordinary steam or by the steam (or vapor) of formaldehyde, which had been found to produce an immediate effect by the Hygienic Institute.

The council felt compelled to recommend the establishment of a central disinfecting institute in order to carry out either the one or the other of these means.—*Thierärztl Centralblatt*, December 15, 1895.

REPORTS OF CASES.

PECULIAR FATAL RESULT OF AN ŒSOPHAGEAL OBSTRUCTION.¹

BY E. B. THURSTON.

THE subject was an Irish terrier pup, about eight months old, brought to the hospital at 9 P.M., October 31, 1895, suffering intense pain. The history of the case was very brief, the animal being first noticed to be ill shortly after dinner the day previous.

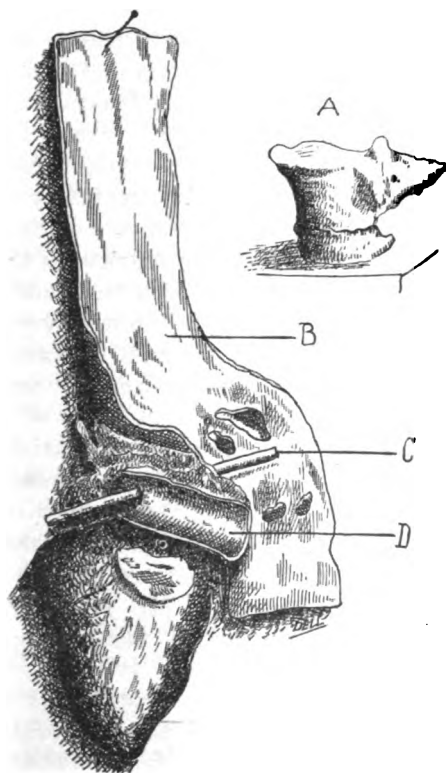
The symptoms pointed to some gastric or intestinal trouble, the patient looking repeatedly around to one side, and tucking his nose close up against the abdomen; this would be followed by occasional efforts to vomit, a complete stretching out of the body, all four limbs being extended, and the animal lying with the abdomen to the floor; pulse very rapid; temperature 104° F.

After a hot bath, a dose of castor oil was administered and an enema of hot water and soap given. A large linseed poultice was then applied to the abdomen; this being removed every hour. Shortly after the first poultice was applied, there being no abatement in the suffering, an anodyne was administered, being repeated at intervals.

At 3 P.M. he passed both urine and feces, the latter thin, of a yellowish color, containing traces of mucus; the last opiate was given at 8 P.M.; the poultice was changed several times up to midnight, when the patient was given three ounces of beef tea and left for the night, being perfectly conscious and apparently free from pain. Both food and water were offered him, but he showed no inclination to partake of either. When seen at 1 A.M. the following morning he was sleeping quietly, but about two hours later he commenced to moan and show further signs of pain, though to all appearance it was not so severe as that of the day previous. The same treatment was continued throughout the day, namely poultices and anodynes, with an occasional enema of warm water. At 6 P.M. he was seized with a shivering fit, as if suffering from cold; although the atmospheric temperature of the quarters in which he was confined was fairly

¹ Read before the Montreal Veterinary Medical Association.

high, the patient's temperature had fallen to 98° F. However, he was wrapped in warm woollen cloths and placed in a basket near the steam radiator in the pharmacy, and an alcoholic stimulant given. An effort was made to repeat this in an hour, but power of deglutition seemed to be lost.



- A. Bone causing perforations, etc.
- B. Internal aspect of Œsophagus.
- C. Skewer placed in the perforations into lumen of aorta.
- D. Inner aspect of aorta.

At 8 P.M. he was seen to be rapidly sinking, mucous membrane of the mouth was extremely pale, and the power of locomotion almost entirely gone; at 9.15 P.M. there was a profuse rectal hemorrhage, and death followed within an hour.

Post-mortem. Being unable to communicate with the owner, the autopsy was not held until sixty hours after death. An opening was made along the median line and abdominal organs

exposed. The spleen was in its normal situation, somewhat elongated, thin and soft, of a pale-red color; on section soft and pale; pulp normal in amount, fibrous tissue normal in quantity, Malpighian bodies distinctly seen, large vessels containing well-formed clots, non-adherent; liver pale and friable. The intestines contained a blackish-green semifluid mass, intestinal mucosa pale, stomach half filled with blood-cast.

Thoracic Organs. Slight adhesion of the right pleura; lungs pale and crepitant throughout; heart normal in size, right auricle almost empty, right ventricle contained some fluid blood and a dark clot; valves normal; left heart almost empty, valves normal; muscle pale; lungs pale and anæmic. Œsophagus at the level of 1 c.m. above the base of the heart obstructed by bone, irregular and jagged in form, greatest diameter 3 c.m. by 2 c.m. by $1\frac{1}{2}$ c.m., causing several ulcerations, one adjacent to the aorta, 2 c.m. long by 7 m.m. wide; surface smooth, red, and at one point penetrating the lumen of the aorta; another very small one is beneath it; on the other side are two ulcerations, one quite penetrating the œsophageal tissues, another small one more superficial.

From this it will be seen that death was due to internal hemorrhage, caused by this piece of bone penetrating the œsophageal wall and into the lumen of the aorta.

In conclusion, I beg to thank Dr. Martin, of the Pathological Laboratory, for the very kindly interest he has taken in this case; and also my fellow-student, Mr. Harri H. Dell, for the admirable pen-drawing from which the accompanying cut is taken.

GOLDEN-ROD KILLING HORSES.

By J. L. SCOTT, V.S.,
State Veterinarian, Wisconsin.

AN article under the above heading has appeared in several newspapers. If I may venture to trench upon your valuable space, perhaps the presentation of the facts of the matter may not be uninteresting to your readers.

During the past four years a large number of horses have died in the northern part of this State from the ravages of a disease which has baffled the skill of veterinarians, and I have

been called upon to investigate the matter as to the cause and nature of the malady. At first it was thought to be anthrax, and samples of the blood and sections from the spleen and other internal organs were sent to the Bureau of Animal Industry and to Dr. Russell, of the State University, for bacteriological examination. Numerous bacteria were found, but the bacillus anthrax was not present. The horses affected were, in the majority of cases, heavy draft-horses from the lumber-camps. These animals were brought from the woods in the spring, usually in good condition, and turned out to pasture. Most of them were fed grain while on pasture.

On the farm of Mr. C. F. Reynolds, Hayward, Wis., over seventy horses have died during the past four years from this peculiar malady. The pasture contained about four hundred acres, three hundred acres of which had been broken and seeded to timothy. Adjoining this was one hundred acres of "slashings," or land from which the timber had been cut but which had never been broken. This was thickly covered with golden-rod. On one side of the farm is a lake with a clean gravel bottom and shore. The lake is fed by springs. There is no marsh or low land on the farm. Upon investigation, I became convinced that the cause of the trouble was to be found either in the food or water, and watched the horses closely for several days and saw them eating the golden-rod greedily, some of them, especially those affected, seeming to prefer the plant to anything else.

I also visited the farm of Peter Truax, near Eau Claire. There is no golden-rod to be found on this farm, and the disease has not made its appearance. During the past summer Mr. Truax placed ten horses in pasture near by where the plant was plentiful, and eight of them died during the summer and the remaining two are affected. When the healthy horses are taken from the pasture in the fall the disease disappears. None of the animals attacked by the malady have recovered, and medicinal treatment does not seem to produce any beneficial effect.

Symptoms. The animal appears dull, ears drooped, temperature elevated, ranging from 103° to 107° F., during the entire course of the disease. The visible mucous membranes are pallid. On the mucous membranes of the vulva small petechial spots are seen. Occasionally the legs swell and oedematous enlargements appear under the abdomen. The appetite remains fairly good during the entire course of the disease. Emaciation

takes place rapidly as the disease advances. Loss of coördination, with staggering gait. Death takes place in from two weeks to two months from the onset.

Post-mortem. On cutting open the body the blood appears to be completely disintegrated, resembling ordinary blood-serum. Intestines bloodless, with numerous petechial spots on the mucous membrane. Spleen enlarged, weighing from six to ten pounds. No structural changes apparent to the naked eye. The lungs and kidneys apparently normal. The brain and spinal cord were not examined.

I am fully convinced that this disease is due to either some poisonous principle in the plant, or some parasitic fungus upon the surface of the same. It is now too late in the season for any investigation to be carried on in this direction this year, but I intend to have the matter thoroughly investigated next summer.

At the January meeting of the New York County Society, two veterinarians made the statement that a physic followed by two-drachm doses of citrate of lithia cured 70 per cent. of their cases of azoturia; also, that they have never noticed azoturia on sunshiny days.

THE Veterinary Department of Harvard has, according to the Boston *Herald* of January 1st, decided to establish a free clinic in connection with the hospital of the Veterinary Department. A new building has been obtained on Northampton Street, and is now being fitted up for this purpose. This plan has been completed through the assurance of two thousand dollars per year, for three years, by a number of Boston's public-spirited citizens. The new building is 60 by 100 feet, and one story in height, and its light and ventilation are said to be all that can be desired. The free clinic established will only be extended to those who cannot afford to pay professional charges for skilled work. Dr. P. J. Cronan, Assistant Surgeon and Instructor, will be in special charge of this establishment. Dr. Cronan is a graduate of the school, and has also had a post-graduate course in foreign schools.

The Veterinary Department has in the three classes this year sixty students with a graded course of nine months each.

EDITORIAL.

BETTER REMUNERATION FOR SCIENTIFIC SKILL RECOGNIZED.

RECENT losses of valuable services to the Department of Agriculture makes very potent the reference of Secretary Morton to the fact that there is a large number of employés who do only clerical work of a low grade, who are overpaid for such services, while, on the other hand, where scientific and technical skill is demanded, the compensation is inadequate, and not equal to that paid by commercial houses, corporations, and individuals, for like services. Hence it follows that ambition to attain a high place and worth are not stimulated or encouraged. Only too true, Mr. Secretary, but it has been ever thus, and every village and hamlet has its quota anxious to work in government positions, because of the greater pay and shorter time required than similar services command in the commercial centres of employment. Wipe it out, Mr. Secretary, for it is only an outgrowth of the pernicious spoils-system, and one of the grotesque pictures of American politics, where the scent of spoils makes party success stand higher than good government or the enforcement of righteous principles.

ADVERTISING ONE'S PROFESSION AND PROPRIETARY REMEDIES.

THE long-tolerated custom of English veterinarians placing on the markets proprietary remedies and cure-alls for the relief and cure of all the various groups of disease equine flesh is heir to, and leading to the endless distribution of placards, testimonials, and circulars to increase the sale thereof, has culminated, as it was destined to, in lowering the status of the profession, and bringing down upon its followers' heads deep and severe criticism. The establishment of a rigid code of ethics is now demanded as the only avenue of relief, and to cut out the deep sore from the body professional. Its rigidity seems severe to a fault. Why a veterinarian should not be allowed to insert

his card stating his name, profession, location, office hours, telephone number, in any reputable newspaper, we are at a loss to appreciate or understand.

LEGISLATION IN IOWA.

THE Act which we print in this number of the JOURNAL, looking to increased efficiency and power in dealing with the questions involving a wholesome and pure milk- and meat-supply for Iowa, contains a number of features which are well worth considering by all those who contemplate inaugurating plans for better veterinary sanitary police systems in their States. We trust that our friends in Iowa may meet with success in their efforts, and we know if failure comes this time it will not be for lack of enthusiasm and work on the part of Iowa veterinarians, and we feel sure that their efforts will be finally crowned with success. A strong arm of support for the Iowa veterinarians has been found already in the influence and assistance of their medical brethren.

McKILLIP'S LOSS.

THE severance of Prof. Schwarzkopf's relation with the McKillip Veterinary College will be a surprise and a great disappointment to many of our readers. His loss to that school will be felt in many ways. First because he associated himself therewith at a peculiar time in the history of veterinary education in America, and brought to its support all the enthusiasm and earnestness that has ever characterized him as an advocate of higher veterinary education in America. Again, of all those associated with this school in the capacity of teachers, there was none so well known among the leaders of advanced education in America as Prof. Schwarzkopf, and this strength, this added force, this influence he carried with him in all its power, and placed McKillip on the high plane she occupies to-day. We shall not attempt to pass upon the many causes that are credited with leading to this rupture, but we earnestly deplore the result that has culminated in this change. We shall not for a moment lose our interest or warm feeling for this school, but in every way support it, so long as we feel that this has been done for the promulgation of a better effort to win for McKillip a higher

place among the colleges. All such dissensions in the early history of any school are disastrous, demoralizing, and far-reaching in injurious effects, and time only will tell whether the lesser or greater evil will prevail from this much-to-be-regretted change.

AN UNFORTUNATE INCIDENT.

THE implanting of home customs on foreign soil or in foreign institutions is too fraught with danger to be given encouragement any longer. Often a day, in these swiftly changing times, strains the relations for a time between the most friendly countries. The incident at the Toronto Veterinary College on Thanksgiving Day last must be abhorred and regretted by all, and the results must be disastrous to that school in lessening its great quota of students annually recruited from the United States. If the custom has annually prevailed for a period of years of unfurling the American flag in the college class-room on that auspicious day, there can be little said in extenuation of the insult given it by those of another country. A custom that cannot safely be encouraged should, therefore, be withheld.

THE veterinarians of the District of Columbia in their desire to obtain at the hands of Congress a bill regulating the practice and establishment of a Board of Examiners, should not imperil the success of the bill by demanding that said appointments shall be restricted to members of the local association, when said body does not include all the good men of their district.

The importation of uninspected English bacon to our ports for consumption by fastidious customers is one of the anomalies of the day, while every pound for export has to undergo thorough inspection.

Veterinarians of Illinois are considering the necessity of greater safeguards for the people from the imposition of ignorant pretenders who rob the public under the guise of veterinarians. The establishment of a State Board of Veterinary Examiners is being urged, and the necessity of registration is now realized.

LEGISLATION.

NEW YORK STATE VETERINARY LEGISLATION.

THE following Act, which asks for an extension of the time of registering for non-graduates and graduates who have been too ignorant, careless, or negligent to register, was offered by Mr. C. C. Cole in the Assembly at Albany. We are informed that it is instigated by certain graduates who have made cat's-paws of non-graduates to save themselves. Its object in Section 1 is to obtain extension for time of registration. The object of Section 2 in changing the number of other clauses we have not been able to solve :

Section 1. Section one hundred and seventy-one of article ten of the public health law, being chapter six hundred and sixty-one of the laws of eighteen hundred and ninety-three, as amended by chapter eight hundred and sixty of the laws of eighteen hundred and ninety-five, is hereby amended to read as follows :

§ 171. Qualifications for practice: No person shall practice veterinary medicine after September first, eighteen hundred and ninety-six, unless previously registered and legally authorized, unless licenced by the regents and registered as required by this article; nor shall any person practice veterinary medicine who has ever been convicted of a felony by any court, or whose authority to practice is suspended or revoked by the regents on recommendations of a State board.

§ 2. Sections one hundred and eighty, one hundred and eighty-one, one hundred and eighty-two, one hundred and eighty-three, and one hundred and eighty-four of article ten of the public health law, as added by such chapter eight hundred and sixty of the laws of eighteen hundred and ninety-five, are hereby renumbered, and shall hereafter be designated respectively as sections one hundred and seventy-nine-a, one hundred and seventy-nine-b, one hundred and seventy-nine-c, one hundred and seventy-nine-d, and one hundred and seventy-nine.

§ 3. This Act shall take effect immediately.

Active work was at once undertaken by the officers of the New York State Veterinary Medical Society, and by Dr. O'Shea, Chairman of the Legislative Committee of the Veterinary Medical Association of New York County, to defeat this amendment. Dr. O'Shea issued the following letter to several hundred veterinarians of the city and State of New York :

NEW YORK, January 27, 1896.

DEAR SIR: On behalf of the Committee on Legislation of our Association, I beg to call your attention to Bill No. 249, introduced in the Assembly

by Mr. C. C. Cole, seeking to amend the Public Health Law relating to the practice of veterinary medicine by extending the time for registry until the first of September, 1896.

You know how hard veterinary surgeons in New York have fought such endeavors in the past, both singly and through the Society, and you will readily perceive that all our efforts will come to naught unless we all array ourselves again against this proposed legislation, that will once more open the doors of our profession to a lot of unqualified applicants.

In addition to the action that will be taken by our Committee before the Legislature, we deem it wise that all practising veterinary surgeons in New York City should address individual letters of protest to Hon. H. T. Andrews, Chairman of the Committee on Public Health of the Assembly, before whom the matter will come up on Wednesday at 2 P.M. As the time is short, we suggest that you address him immediately.

Yours truly,
 ARTHUR O'SHEA,
 Chairman of the Committee on Legislation.

The following is a sample of the argument submitted to the Legislative Committee :

NEW YORK, January 28, 1896.

THE HON. H. T. ANDREWS, Chairman of the Committee on Public Health,
 Assembly Chambers, Albany, N. Y.

SIR: We have the honor to ask of your Committee an adverse report upon No. 249, Int. 244, in Assembly: An Act introduced by Mr. C. C. Cole January 16th, for the following reasons: In 1886 a satisfactory law was passed for the improvement of the status of the veterinarian and a guarantee to the agriculturist of a certain degree of education and knowledge in the veterinarian. Extensions of the time for registration were made each year until 1893, when an extension bill was vetoed. Every practitioner in the State was notified time and again of the law and failed to comply with it. Now these practitioners who ask for an extension are either so ignorant that they could not read the veterinary journals and the circulars sent them asking them to comply with the law within the required time, or if they have been criminal in knowing the law and practising without being registered at any time since 1886. For the most complete argument I would refer you to Governor Flower's veto of an extension act in 1893. This law to be amended went into effect last year, and certain good citizens have gone to the expense and labor of complying with its requirements, and now the negligent, and those who have been *illegally* practising within the last year, ask for a personal favor against the educational interest of the community.

The veterinary colleges of the State of New York have complied with the law of 1895, Chapter 860 by requiring the Regents' preliminary examination, and have thereby sacrificed incomes by having a smaller number of students, but are gratified in the result of having more intelligent students.

Very respectfully, your obedient servant,

R. S. HUIDEKOPER,
 President of the Veterinary Medical Association of New York County.

One of the examiners of the State Board offered as a substitute an extension bill as follows, to include graduates only which may be submitted :

§ 1. Laws of 1895, Ch. 860, § 179, is hereby amended by adding the following:

Any graduate of a registered veterinary school who received his degree prior to July 1, 1895, and has practised veterinary medicine in some county in New York State, but who failed to register in the Veterinary Medical Register of the county in which he so practised, may, on unanimous recommendation of the State Board of Veterinary Medical Examiners, receive from the Regents a certificate which will entitle him to register as a veterinary practitioner in the county of his residence, or practice at any time before September 1, 1896.

§ 2. This Act shall take effect immediately.

This amendment was opposed by one of the Board, Dr. Huidekoper, as explained in his letter to the Board of Examiners, which follows:

NEW YORK, January 28, 1896.

BOARD OF VETERINARY MEDICAL EXAMINERS, STATE OF NEW YORK.

DEAR DOCTOR: In reply to my last letter to each of the examiners, I have received Dr. Law's letter, January 27th, Dr. Kelly's, January 27th, and Dr. Hinkley's letter, January 26th, and you have my acquiescence to the substitution of the amendment which was sent me to be made in place of the Cole Bill, which we expect to defeat; but I give this acquiescence with the distinct understanding that on the first day of September, 1896, we shall have raised a fund and employed proper counsel to prosecute every offender, and find out whether the so-called laws of 1895 and the present amendment is law or not.

I, for one, will have nothing more to do with this easy-going accommodation. We evaded the strict enforcement of the law in certain cases; we then picked out a Dr. Comstock in Albany, and he, like a man, passed an examination, and a very good one, and earned the credit of being the first man to comply with the law.

Now, we propose to accommodate a lot of loafers around the country who are too ignorant to read the journals, and know the law requirements since 1886, or, if they did know the law, were too poor citizens to comply with the law. I think this explains distinctly my feelings.

Under protest I acquiesce, and authorize you to sign my name after the signatures of the other four examiners are attached.

Very truly yours,

RUSH S. HUIDEKOPER.

The Veterinary Legislative Committee of the Association has also introduced a bill to rectify the error of the legal counsel who freed the veterinarian of country counties from jury duty, but left those of New York City and Brooklyn subject to duty. This will undoubtedly pass easily, but by now becoming "special" legislation will require the approval of the Mayor of the city, as well as that of the Governor of the State.

IOWA.

AN Act to Repeal Chapter 50 of the Twenty-fourth General Assembly 1892, and provide a substitute therefor, and to enlarge the duties and powers of the State Dairy Commissioners and provide an appropriation therefore.

Be it Enacted by the General Assembly of the State of Iowa :

Section 1. That chapter 50 of the Twenty-fourth General Assembly of 1892 is hereby repealed, and the following enacted in lieu thereof:

If any person or corporation shall sell or exchange or expose for sale or exchange, deliver or bring to another for domestic use or to be converted into any product of human food whatsoever, any unclean, impure, unhealthy, adulterated or unwholesome mik, or milk from which has been held back, what is commonly known as strippings, or milk taken from an animal having disease, sickness, ulcers, abscesses, or any running sore, or was taken from an animal less than fifteen days before or less than five days after parturition, or should sell or offer for sale any diseased or unwholesome meats, or where the flesh of one animal has been substituted for that of another; or for from animals in advanced stages of pregnancy, or which have recently given birth to young, shall upon conviction thereof be fined not less than \$25.00 nor more than \$100.00, and be liable in double the amount of damages to the person or persons upon which such fraud shall be committed; provided that the provisions of this act shall not apply to skimmed milk or condemned meats when sold as such.

Sec. 2. For the purposes of this act, milk which is proved by any reliable method or test or analysis, to contain less than three pounds of butter fat to the one hundred pounds of milk, shall be regarded as skimmed milk, or cows more than eight months and sows and ewes more than fourteen weeks pregnant, shall be considered as advanced in pregnancy, and those that have given birth to young less than ten days before time of slaughter, shall be considered as having recently given birth to young.

Sec. 3. It is hereby made the duty of the State Dairy Commissioner to enforce the provisions of the foregoing sections.

Sec. 4. The State Dairy Commissioner shall, as soon after this

act goes into effect as convenient, and biannually thereafter on March 1st, appoint in each city within the State, having 5000 or more inhabitants, a regularly graduated veterinarian, who shall act as local dairy and meat inspector for a period of two years, or until his successor has been lawfully appointed.

Sec. 5. It shall be the duty of said inspectors to personally inspect each dairy at least once a month, and examine into the sanitary condition of the barns, milk rooms and utensils, food, and water supply, and make a critical examination of the health of each cow in dairy, and make the necessary milk tests; he shall also personally, and at frequent intervals, inspect and examine into the sanitary condition of each meat market, stall, shop, store-room, warehouse and their contents, in or about which any milk, meats, fish, oysters, birds or fowls are kept, held, or offered for sale as human food.

Sec. 6. It shall be the duty of said inspectors upon discovering any unsanitary condition of the barns, milk-room, meat market, stall, shop, warehouses, or storehouse, utensils, or vehicles, used to store, draw, or deliver any milks, meats, fish, oysters, birds, or fowls, to order the same to be put into a sanitary condition within twenty-four hours, or as soon thereafter as practical, or should he discover any diseased, adulterated, unwholesome, or impure milk, or any diseased or unwholesome meat, fish, oysters, birds, or fowls, he shall at once notify the person or persons in whose possession said articles are found, to at once remove the same to such place as said inspector shall designate for its destruction as human food, or should any inspector find any cow or cows at a dairy so diseased as to affect the milk, thereby rendering it unwholesome, he shall at once quarantine said animal or animals, as far as the use of the milk is concerned, and in case of tuberculosis, or should the inspector suspect tuberculosis, he shall at once notify the State Dairy Commissioner, who may at his discretion order the inspector to test the herd with tuberculin, the necessary material and assistance to be furnished by the commissioner, and any cattle found to be diseased with tuberculosis shall be disposed of according to the laws of the State governing said disease.

Sec. 7. Local inspectors shall receive as full compensation for their services salaries as follows: In cities having from 5000 to 10,000 inhabitants, \$480 per annum; in cities having from 10,000 to 15,000 inhabitants, \$600 per annum; in cities having from 15,000 to 25,000 inhabitants, \$700 per annum; in cities having

from 25,000 to 50,000 inhabitants, \$1200 per annum; in cities having from 50,000 to 75,000 inhabitants, \$1500 per annum; payable monthly; and before entering upon the duties of his office each inspector shall, in addition to the oath of office or affirmation required by law, execute a bond to the State of Iowa in the penal sum of \$1000 for every \$500, or fraction thereof, he shall receive in salary.

Sec. 8. Each person, firm, or corporation conducting a dairy, milk depot, or meat market or stall, shall procure a license from the State Dairy Commissioner, through the local inspector, and shall pay such license fee as hereinafter prescribed. A dairy license fee shall be 50 cents per head for each cow used in said dairy, milk depot; wholesaling, \$10.00, and for retailing, \$5.00. Each meat market wholesaling or jobbing meats shall pay a license fee of \$50.00, and each retailer of meats shall pay a license fee of \$25.00.

Each license shall be annual, and terminate on March 31 of each year.

All license fees collected by the local inspectors shall be turned over to the State Dairy Commissioner, and by him to the State Treasurer.

Sec. 9. Any person or persons who shall violate, disobey, omit, neglect, or refuse to comply with, or who resists any of the provisions of this act, or who omits, neglects, or refuses to comply with the orders of said inspector, or who resists said inspectors in carrying out any of the requirements of this act, shall upon conviction thereof be fined not less than \$25.00 nor more than \$200.00, or be imprisoned not less than thirty nor more than one hundred and twenty days, or both, at the discretion of the Court.

Any person or firm convicted of violating any of the provisions of this act shall, in addition to the prescribed fine, forfeit their license fee for the current term.

Sec. 10. The State Dairy Commissioner is hereby authorized to make rules and regulations for the enforcement and carrying out the purposes and intents of this act.

Sec. 11. There is hereby appropriated out of any of the State funds not otherwise appropriated, the sum of \$ for the carrying out of this act for the next biennial period, provided not more than one-half of the same shall be used before March 31, 1897.

CONTROL WORK.

Connecticut. At Pomfret, thirty-eight out of a herd of fifty-two Jerseys were condemned by the tuberculin-test, and with very few exceptions proved tuberculous. These examinations were made in the field at the time of destruction, and was not as thorough as they might have been.

The *Telegram*, of Worcester, Massachusetts, says that the efforts to raise a fund of money to fight the Cattle Commission this winter in Boston has met with very little success. Many of those who most bitterly opposed the Commission a year ago are not only friendly to it now, but milk producers are realizing the necessity of assuring their customers of the healthiness of their herds and sanitary condition of their dairies. The public have been aroused to the necessity of demanding that they be insured a wholesome supply of milk. Several farmers who have recently purchased new cattle have had them all tested before bringing them into the State.

Mr. George Austin Bowen, of Woodstock, a believer in the efficacy of tuberculin, at a meeting of the State Grange at Athol, Massachusetts, came out victorious in a controversy on the subject, and the more important officers of the Grange elected are advocates of a thorough eradication of tuberculosis in Massachusetts.

The annual report for the year ending December 15, 1895, of the Massachusetts Cattle Commission has these very salient features incorporated therein. The list of inspectors in the various towns seems to have almost every occupation represented among the number except a preacher. The undertaker, the barber, the butcher, the fish-monger, horsedealer, janitor, etc. This is one of the weak features of the work, and should be remedied; it is one of the infamous results of the miserable spoils system of politics under which we live. These men are charged with the duty of meat inspection, slaughter-house supervision for contagious and infectious diseases, and it will be readily seen how imperfect such a system must become under such a class of inspectors.

No tuberculosis has been found in sheep—frequently noted in swine.

The law of 1895 militated against a reliable inspection very much, leaving it to physical methods when so demanded by owners and farmers.

Lack of funds are retarding the work very much, and the quarantine expenses are thus made greater. Since October inspections have been carried out in 69 towns, examining 4769 herds, with 26,756 cattle, 5412 sheep, and 13,061 swine. Between June 5th and December 15th, 18,938 cattle, 36,720 sheep, and 2779 swine were inspected at slaughter houses. Under the same law 503 cattle, 212 sheep, and 1034 swine have been inspected as killed by owners; the meagre character of such returns indicate a non-compliance with the law. Some 192 cattle, 8 sheep, and 97 swine proved tubercular. In regard to the sheep the Commission say the opinion as given was by inspectors and is unsupported by laboratory investigation. Two hundred and six cases of glanders were destroyed, and autopsy corroborated the diagnosis made. This is 46 more than were killed in 1894. The Board points to common watering places as a potent source of its perpetuation. No less than 65 outbreaks of hog cholera are reported. Rabies in but a few towns.

The report reviews the experimental tests at the cattle markets, and a careful examination satisfies the Commission that the errors formerly reported cannot be justly attributed to the failure of tuberculin as a diagnostic agent, but due to local causes of excitement of the animals under inspection, and this work has been abandoned, examinations with tuberculin only being conducted now of animals under normal conditions.

One autopsy revealed tuberculosis of the eyelid; the brain, spinal cord, lower joints of limbs have all been noted as points of attack.

The establishment of interstate certificates of inspection by reputable veterinarians, based upon tuberculin tests, have been accepted, and restricted the opposition and difficulties in the work. Purchasers who demand a certificate of inspection are on the increase, realizing the value therein.

Of the first 793 condemned, 15 failed to reveal on autopsy lesions of the disease. Of the last 1000 condemned, 989 were found diseased; of the 11 in question only 3 autopsies were made by agents of the Board.

The following shows the increase in the number of herds the

Board was requested to examine with tuberculin under the provisions of the law of June, 1895: For July, 10; August, 68; September, 74; October, 92; November 138; to December 16th, 153 requests. These requests involved the examination of 4093 animals, of which 1081 were condemned. In 2 cases on autopsy the disease was not found, a fraction of 1 per cent. in error. These herds were dairy stock, and physical examination would have been fruitless, and suspicious animals to the eye were rarely noted. Of the 314 herds thus tested, only 24 were found free from the disease, a percentage of 26.3; in New York State, under similar conditions, the percentage was 34.9. Tests made by private veterinarians, covering 584 animals, showed 90 condemned, only 1 of which failed to reveal evidence of the disease. The accuracy of the tuberculin test is fully indorsed; the feeling against its use measurably overcome, and the fear of harmful influence upon healthy animals steadily disappearing.

Average compensation \$35 per head for those destroyed. Under the present system many large centres of milk production have been cleaned up, and greater zeal will follow in keeping the disease out in purchasing new animals. The public are being rapidly educated on the question, and their demands so rapidly increasing for evidence of a source of supply, of pure milk that the Board feels that self-protection will rapidly win over those who have objected to the inspection and who fought the systematic plan originally inaugurated. Under this plan the Board do not expect to rid the State of the disease, but only at the most to restrict the dangers and limit the extent and prevalence of the disease. Systematic inspection, thorough disinfection of premises, and rigid quarantine regulations for all fresh cattle brought into the State are the only absolute safeguards in the opinion of the Board.

Riper experience teaches that the contagious principle is stronger than first supposed. Contagion may be quick and rapid, but it is extremely subtle, and its extreme development may be slow and inconspicuous.

Ten per cent. was the original estimate of the Board as to the number diseased in their State. Of those examined it has reached 16 per cent. It is to be said that in a large number of instances the herds were considered suspicious.

The dangers in using the milk and meat of diseased animals, especially milk, are freely commented upon, and the opinions of leading authorities over the world are quoted to support the

position of the Board on this point. It quotes the greater frequency of udder lesions than were formerly supposed. They recommend severe form of regulation by which milk shall not be delivered in the State except that coming from animals which have been properly shown to be free from disease.

Referring to the unreliability of physical examinations, it states that during the past year it would have failed to detect the presence of the disease in a majority of the animals tested on voluntary requests for such examinations, while on the other hand tuberculin demonstrated that the disease was not present in more than 55 ½ per cent. of the animals quarantined on suspicion by the inspectors. The healthy animals are not injured by testing with tuberculin; herds are quoted where they have been tested over and over again without injury. Tested animals are worth more in the market, and thoroughbred animals can scarcely be sold without having been tested.

Better sanitary conditions of the stable are strongly urged; the exclusion of human consumptives from stables, though the greater danger is from animals to man, laboratory research proving that the bovine bacillus kills out the human bacillus. Up to June 5, 1895, \$91,876 were expended, of which amount \$47,500 went to the owners of condemned animals; from June 5th to December 15th, \$75,600, \$59,500 of which went to owners for condemned animals.

At Whately, in December, a herd of 16 cattle were tested with tuberculin; 14 responded to the test and, were ordered destroyed by the Commission. These were registered Pole and thoroughbred Durham.

Out of 60 cattle tested at Amherst, 17 were condemned, destroyed, and found diseased. Many others are requesting tests of their herds.

The *Mail* of Fitchburg, of December 24th, in an editorial, refers strongly to a demand from the public for milk from tested herds.

Of the herds recently examined at Worcester, 50 per cent. were condemned. The expression of owners who appreciated the necessity of their herds being freed from diseased stock, no matter what the inconvenience. This has led to more satisfactory conditions of stable, where these herds were formerly housed.

The Worcester *Telegram* of December 26th in a leading editorial strikes hard the anti-tuberculin syndicate, which last year succeeded in having removed from the law under which the Commission was working, the compulsory tuberculin test, and points to the fact that the Commission are at present overwhelmed with written requests, many of which are from former antagonists of the Commission, to have their herds tested with tuberculin.

Dr. George N. Kinnell, inspector of cattle for Pittsfield, in making his report to that city, refers very forcibly to the slow and insidious character of tuberculosis, and how uncertain the diagnosis by physical examination, and referring to the absolutely harmless effects of tuberculin as a diagnostic agent, and feeling that a certificate of the healthfulness of the herd made upon physical examination is practically worthless, made the following proposition to the local dairymen: That 25 per cent. of the animals in each herd be submitted to the tuberculin test. In the event of none of these animals reacting the balance of the herd should be presumed free from the disease. Should one or more of the 25 per cent. react the entire herd should be subjected to the test forthwith. Condemned animals to be destroyed and paid for by the State. This plan was adopted and applied to all herds except one supplying milk within the city limits, or to the licensed men who offered milk for sale on the street. Number of herds inspected 29; number of animals, 450. Disease was found in 9 herds; total number tested, 258; 33 condemned; valuation of condemned animals was \$1000; average valuation, \$33 per head.

Governor Greenhalge, in his inaugural address to the Legislature, after referring to the work of the Tuberculosis Commission for 1895, says: "There seems to be less opposition to the work of the Commission and an increase of confidence in the methods adopted. It is true that the whole subject is one of difficulty, and there is need of patience and judgment on all sides in order to obtain the best results. I trust the report of the Commission will receive your most earnest consideration."

Pittsfield establishes a unique position in the State, where practically the entire stock has been submitted voluntarily to the tuberculin method of examination. It has found favor among dairymen, and will no doubt be continued in conjunction with the introduction of new cattle.

New York.—A meeting of the State Board of Health in New York, in December, showed that since July 15, 1895, 853 head of cattle had been examined; 298 condemned, or nearly 35 per cent.; that the tuberculin test was trustworthy in every case, and how best to protect the milk-consumers was under consideration. President Wilson suggested that the Legislature should enact a law providing for the inspection of all the dairy-herds from which New York city's milk-supply is secured, and Dr. Biggs, director of the city board's bacteriological laboratory, showed that an effective inspection could be made.

The *Times* says that unless the State will take some action there is no question but that the city will take measures to protect its people from the dangers of the milk-supply from such diseased sources.

Maine.—Portland's Board of Health, desiring that the city's milk-supply should be from healthy animals, through the Board of Cattle Commissioners, have been investigating the condition of the herds supplying that city. A herd of more than 30 were recently tested, and 18 out of 31 responded to the test. But one case was discovered in this herd by physical examination.

Vermont.—Mr. C. M. Winslow, of Brandon, whose herd was freed from tuberculosis once, is again having the herd tested as an additional assurance to his patrons that he is supplying them with a pure article. This plan will become more generally adopted in every locality in the near future.

The same gentleman, speaking on the value of tuberculin, said he considered it the most reliable diagnostic agent ever introduced; without it there was no hope of cleaning the diseased from a herd. It was an extremely delicate test, and should only be used by careful and scientific investigators. The errors charged in its use, he believed, were not the fault of the diagnostic agent, but due to lack of thorough and careful conditions, circumstances and environments at the time of its use. He had no mistakes in those where he had used it, and afterward destroyed the subjects, every one revealing evidences of the disease.

An outbreak of anthrax in a herd in this State, numbering 125, where 14 had died from gross carelessness in dealing with the carcasses, but one death occurred subsequently to the primary vaccination. It is confidently believed that it will be a

safeguard in allowing the use of thousands of acres of infected territory in this State alone.

Pennsylvania.—Philadelphia's Meat-Inspection Department connected with the City Board of Health shows that 145,059 cattle were inspected, of which number 162 were condemned and destroyed; 129 of these were suffering from tuberculosis and 33 with other diseases; 87 sheep, 72 hogs, and 280 chickens were condemned as unfit for food; 2297 calves were found to be too young to be killed. Ten persons were also arrested, charged with selling unwholesome meat.

A preliminary meeting of the State Veterinary Sanitary Board was held in January. State Veterinarian Pearson was elected Secretary, and rules for the government of the Board were discussed.

A meeting of the Associated Health Authorities of Pennsylvania convened at Harrisburg in January. Among the subjects discussed were "Legislation for Pure Milk;" "The Sanitary Relation of Slaughter-houses and Pork-packing Establishments; of the collection of a large number of hogs and the various examinations from the process attendant on the commercial utilization of offal to diphtheria;" the law of 1895 to limit the spread of contagious diseases.

Tuberculosis has again developed in the herd of cattle at the Norristown Insane Asylum. Active measures are in operation for its stamping out. We understand no precautionary measures were adopted in reëstablishing this herd, a danger which is too little appreciated.

Colorado.—Veterinarian Gresswell reports that the use of anthrax vaccine has proved very efficacious in reducing the losses from this disease. In a number of herds where at times the losses amounted to one or two head per day the disease has entirely disappeared.

Louisiana.—The use of vaccine to control black leg among mules has proved very satisfactory.

Wyoming.—Experimental tests are in use among a bunch of horses in this State for black leg, Pasteur vaccine being used for protective purposes.

Virginia.—Anthrax vaccine is being used in a district where the disease has broken out in cattle.

New Jersey.—President Rowell, of the Bridgeton Board of Health, reports that 94 herds were infected with anthrax in that district, and of this number 600 cows, 267 horses, and 50 mules were infected, of which 174 cows, 32 horses, and 16 mules died, a total of 222 deaths. Of these, 150 cows, 23 horses, and 13 mules were not inoculated; 17 cows and 2 mules were inoculated with the first lymph, and died before the second inoculation, and 3 cows, 4 horses, and 1 mule died after the second inoculation. Pasteur anthrax lymph was used in this district.

California.—The Board of Supervisors of the County of Alameda ordain as follows:

Section 1. Every milch cow or other animal within the County of Alameda having tuberculosis shall at once be deprived of life by the owner or person having charge thereof, upon discovery of its condition, any such owner or owners omitting or refusing to comply with the provisions of this section shall be deemed guilty of a misdemeanor.

Section 2. Any person violating the provisions of this ordinance, upon conviction thereof, shall be punished by a fine of not less than fifty dollars, and not more than one hundred dollars, and in case such fine be not paid, then by imprisonment in the county jail of said County of Alameda at the rate of one day for every two dollars of the fine imposed.

This ordinance shall take effect and be in force thirty days after its passage.

National.—The Secretary of Agriculture makes a strong point in his report of the work of the Bureau of Animal Industry, Inspection of Meat Department, when he points to the necessity of State and municipal authorities intelligently and diligently co-operating with the National inspection, and thus spare the people in great killing centres from consumption of rejected animals and meats. He wisely urges the individual to demand the same inspection and certification to the products he purchases.

1,361,800 animals were inspected during 1895, for foreign shipment, of which number 1060 were rejected. Every individual animal was tagged and numbered so as to be easy of identification.

Better safeguards are demanded for the disinfection of cars, stock-yards, and ships, to protect sheep from the development of scap in transit.

SOCIETY PROCEEDINGS.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THIS Association met in the Library of the Faculty of Comparative Medicine and Veterinary Science on Thursday evening, November 7, with the President, Dr. M. C. Baker, in the chair. Drs. McEachran, Adami, Mills, and Martin were also present.

The minutes of the last meeting were read and approved. The Secretary was then instructed to convey the thanks of the members to Dr. F. H. Osgood, Chairman of the Massachusetts State Board of Cattle Commissioners, for the donation of fifty copies of the report of the Board for 1895.

Dr. D. McEachran reported the addition to the library of Moller's *Surgery*, and also Vol. II. of Fleming's *Surgery*.

Mr. Thurston reported a case of "Obstruction in the Thoracic Portion of the (Esophagus of a Dog, Due to the Presence of a Bone,"¹ with symptoms of gastro-intestinal irritation, the animal dying shortly after admission to the hospital. The post-mortem revealed an ulcerative condition and a perforation through the œsophageal tissue into the aorta, death being due to hemorrhage into the stomach through this aperture. Drs. McEachran and Mills reported some similar cases from their own experience.

Mr. Harri H. Dell presented a carefully prepared paper on "Pyæmia in the Dog," and illustrated his remarks by microscopic and macroscopic specimens from a case which recently came under his observation. In the discussion following Dr. Adami congratulated the essayist on his contribution to our literature on the subject. He also referred to the experiments of Councilman, which demonstrated the fact that pus can be produced by caustic substances without the intervention of pyogenic organisms.

Dr. McEachran gave some further remarks on the history of the disease, and instanced the occurrence of empyema in a cow following mammitis.

Dr. Mills referred to the literary and scientific merit of the essay and reported the occurrence of the disease in his own kennel.

Dr. Martin followed with very interesting remarks on the pathology of pyæmia and septicæmia.

The essayists for the next meeting were then appointed, and the meeting adjourned.

A REGULAR meeting of the Association was held on Thursday evening, November 21st, 1895, with the Honorary President, Dr. D. McEachran, in the chair.

The minutes of the previous meeting having been read and adopted, a case reported by Mr. J. S. Patterson was presented for diagnosis.

The animal in question was a bay horse, five years old, weight 1000 pounds. When called to see the case found the animal in a recumbent position, unable to rise. Temperature 100.5°, pulse 46, respiration 12.

¹ Reported in this number. See p. 130.

When assisted to his feet moved without difficulty and seemingly all right. The next day he was down again; was again raised and placed in slings, and received a laxative, followed by nerve tonics.

In twenty-one days was sent home with no abatement of the symptoms. Was put to work, which he performed satisfactorily, but every morning had to be assisted to his feet. Some three months after he fell on the pavement, and, being unable to rise, was shot by a policeman. No post-mortem was held, but it was the consensus of opinion of those present that the difficulty in rising was due to anchylosis of some of the vertebræ.

Mr. John Greer contributed a lengthy, but carefully prepared, paper on diagnosis and general symptoms of disease.

A prolonged discussion ensued on the subject of the variation of the pulse in different animals and in those of the same species.

Dr. D. McEachran addressed the meeting on the subject of "Coughs as Symptomatic of Disease with Special Reference to the Horse."

Dr. M. A. Dawes, of the Health Department, followed with some good advice to the experiment committee.

The essayists for the next meeting were then notified, and the meeting adjourned.

A REGULAR meeting of the above-named Association was held in the Library on December 5, 1895, the President, Dr. M. C. Baker, occupying the chair. The roll-call showed a good attendance of members and visitors. The minutes of the previous meeting were read and approved.

A report was received from the experimental committee on some experiments with pilocarpin and eserine, the combination not having proven satisfactory in the cases under observation.

Mr. Charles H. Higgins, B.S., presented a paper on "Bacteriology and its Practical Applications."

He gave an extended historical résumé of the development of bacteriological science, which development was largely due to the discovery and subsequent improvement of the microscope. The theories of immunity advanced by various investigators were each in turn enumerated, and the fallacies of several were clearly demonstrated. Many interesting topics arose out of the discussion which followed, among them being inspection of milk and propagation of tuberculosis; tuberculin and mallein and the dosage of each.

Mr. John Greer reported a case of "Septic Aspiration-Pneumonia in a Cow." The first symptom noticed in the animal was diminished lactation. Soon a swelling appeared on the left cheek over the region where Steno's duct discharges into the buccal cavity. This swelling increased until there was occlusion of the lachrymal duct and a bulging of the eye from the orbit. Actinomycosis was suspected, but microscopic examination of the purulent matter in the swelling failed to verify the suspicion. Febrile symptoms developed, accompanied by chills, weak pulse, depression, and diarrhœa, death occurring about four weeks after the first appearance of the swelling. The post mortem revealed a large abscess on the inferior maxilla with softening and necrosis of the adjacent tissues. The lungs contained multiple abscesses, due to the inspiration of septic germs from the primary abscess of the jaw. A pneumonia had developed in addition. The term septic aspiration-pneumonia was very appropriate. In Mr. Greer's opinion,

which was concurred with by those present, had the original abscess been recognized early and subjected to proper treatment, the animal would have made a good recovery. The case was an interesting one, and gave rise to considerable discussion.

The essayist for the next meeting was appointed, also a member to serve on the experimental committee.

HARRI H. DELL,
Secretary-Treasurer.

CALIFORNIA STATE VETERINARY ASSOCIATION.

THE annual meeting was held in the lecture rooms of the California Veterinary College, San Francisco, on December 11, 1895. The meeting was called to order at 2 P.M. by the Secretary, Dr. R. A. Archibald, who stated that as the President and Vice-President were both unavoidably absent, it would be necessary to elect a President *pro tem*. Whereupon Dr. H. A. Spencer, of San Jose, was unanimously chosen. The roll was called, and the following members answered to their names: Profs. Skaife and Egan, Drs. Archibald Spencer, Sr., Spencer, Jr., Pierce, Fabbì, Forrest, Maclay, Jackson, Hagerty, and Willard; visitors, Professors Steers and Cunningham, and the students of the California Veterinary College. Professor Skaife, Dean of the Faculty of the California Veterinary College, tendered the Association a hearty welcome.

The minutes of the previous meeting were read and approved.

The Secretary stated that it would be in order for the Chair to appoint a committee as provided for in a resolution adopted June 12, 1895. By request said resolution was read. It was moved by Dr. Maclay and seconded by Dr. Egan that the motion whereby said resolution was adopted be rescinded; so ordered. The subject-matter of the resolution was taken up and considered, and several amendments proposed. It was moved by Dr. Maclay and seconded by Dr. Egan that a committee of one be appointed by the Chair to make the required amendments; so ordered; whereupon the Chair appointed Dr. Maclay as said committee, and he reported as follows: "Your special committee appointed to make required changes in resolution introduced on June 12, 1895, beg to report that all of said changes have been made, and the resolution herewith returned." On motion, the report of the committee was received, and the Secretary requested to read the resolution as offered, and as amended by the committee:

"Whereas, The live-stock interests of this State are suffering from the malignant influences of contagious and infectious diseases; and, *whereas*, the health of the public of this great State is also jeopardized by the presence of said contagious and infectious diseases which affect the domestic animals; and, *whereas*, we, the members of the California State Veterinary Medical Association realize that this state of affairs is due to the fact that there are no laws on the statute books of this State sufficiently adequate to control the ravages of these contagious and infectious diseases, therefore, be it *Resolved*, That the presiding officer of this meeting be, and is hereby authorized and requested to appoint a committee of three members of this Association, whose duty it shall be to wait on or communicate with the Governor of this State, with a view of prevailing upon him to appoint a commission to consist

of two veterinarians, one physician, one attorney, and one dairyman or stock-raiser, who shall receive no compensation, and whose duty it shall be to devise ways and means whereby the public health and the live-stock interests of this State may best be protected from the ravages of contagious and infectious animal diseases, such as anthrax, tuberculosis, glanders, hog cholera, etc."

It was moved by Dr. Maclay and seconded by Dr. Egan that the resolutions as amended be adopted; so ordered. Whereupon the President *pro tem.* appointed Drs. Mackay, Skaife, and Archibald a committee as provided for in the foregoing resolution.

Secretary Dr. Archibald read his annual report for the year ending December 1, 1895. On motion by Dr. Price, said report was received and ordered filed.

The Treasurer being absent, the hearing of his annual statement was postponed until the next quarterly meeting of the Association.

An application for membership from Professor Steers, of the California Veterinary College, was read and referred to the Board of Examiners, with the request that said application be acted upon before the end of the present convention.

The Chair stated that before proceeding with the election of officers it would be necessary to nominate some gentleman for the office of President; further, that nominations for all other officers were still open. Professor Skaife, of San Francisco, was elected President; Dr. H. Lemke, Bakerfield, Vice-President; Dr. D. F. Fox, Sacramento, Secretary; Dr. E. F. Pierce, Oakland, Treasurer; and Drs. Maclay, Egan, Spencer, Sr., McCollum, and Graham, Board of Examiners. The newly elected President, Prof. Skaife, thanked the members for the honor conferred, and asked President *pro tem.* Spencer to continue as chairman for the remainder of the session, which Dr. Spencer kindly consented to do. The Secretary-elect, Dr. Fox, not being present, and Dr. Archibald having no desire to continue the duties of Secretary, Dr. Maclay was requested and consented to act as Secretary for the remainder of the session.

The subject of delinquencies for dues and assessments was taken up and considered. Dr. Egan moved that the Secretary be instructed to notify all members of the amount of their arrearages, and inform them if said amount was not paid on or before the second Wednesday of March, 1896, that their names be referred to the Board of Directors, with instructions to enforce Section 2 of Article VII. of the By-laws: "Any member two years in arrears for dues or assessments shall have his name dropped from the roll of membership;" so ordered.

A very interesting paper was read by Dr. H. F. Spencer, of San Jose, on "Stomatitis Pustulosæ Contagiosæ." A lively discussion followed.

Dr. Maclay moved that the Association take a recess until 7.30 P.M.; so ordered. At 7.30 o'clock the Association reassembled, President *pro tem.* Spencer in the chair.

Professor Skaife read a very excellent paper on "Physiology," which was handled in a masterly manner, and provoked a warm discussion.

Dr. R. A. Archibald read a very learned and interesting paper on "Contraction of the Foot." This paper was accompanied by a large number of crayon drawings of the horse's foot in health and disease; also drawings of the various kinds of shoes for the relief of contraction. The essayist demon-

strated that he had given the subject a great amount of study. The reading was followed by a very interesting discussion, the majority of the members present taking part.

Dr. Maclay moved that the thanks of the Association be tendered to Ex-Secretary Dr. R. A. Archibald for the very able manner in which he conducted the duties of his office during the past four years; so ordered.

The Board of Examiners reported favorably on the application of Professor Steers, and, on motion of Dr. Archibald, he was elected to membership.

It was moved by Professor Skaife, and seconded by Dr. Archibald, that Professor Cunningham, of the California Veterinary College, be elected an honorary member; adopted. Professor Cunningham being present, thanked the members for the honor, and concluded his remarks by stating that he desired to make investigations on the disease of "Azoturia," and to that end requested the members to furnish him with small quantities of the urine passed by animals suffering from the said affection.

It was moved by Dr. Maclay, and seconded by Dr. Jackson, that the thanks of this Association be tendered to Professor Skaife, Dr. R. A. Archibald, and Dr. H. F. Spencer, for the very learned and interesting papers read at this session; further, that said gentlemen be requested to furnish the Secretary with copies of their papers, to be forwarded to the veterinary journals of America; so ordered.

It was moved by Dr. Maclay, and seconded by Dr. Forrest, that the election of Dr. Creely be rescinded, on the grounds that his election was against the best interests of the Association, and his non-compliance with the By-laws in regard to fees and dues and Code of Ethics; so ordered.

It was moved by Dr. Archibald, and seconded by Dr. Pierce, that the thanks of this Association be tendered the faculty of the California Veterinary College for the use of the lecture-hall and other privileges; so ordered. Professor Skaife responded, by stating that the faculty earnestly hoped the Association would hold their next meeting in the same place.

Mr. Welch, on behalf of himself and fellow-students of the California Veterinary College, thanked the Association for the privilege granted them during the session.

President Skaife announced that Drs. Pierce, Egan, and Jackson would read papers at the next meeting of the Association.

The Chair announced that on the following day (Thursday, December 12th) at 10 A.M., a clinical entertainment would be held at the College Hospital, conducted by Dr. R. A. Archibald.

Adjourned to meet on the second Wednesday in March, 1896, at the California Veterinary College, San Francisco.

THOMAS MACLAY,
Secretary *pro tem*.

H. A. SPENCER,
President *pro tem*.

MANITOBA VETERINARY MEDICAL ASSOCIATION.

THE semi-annual meeting was held on December 17, 1895, Dr. Young, Vice-President, in the chair. Those present were Messrs. S. J. Thompson, W. Sumerton, D. J. McGillivray, C. A. Turley, C. A. Harrison, J. Lipsett, J. G. Rutherford, W. A. Dunbar, W. J. Hinman, R. Price, of St. Paul, Minn.

The minutes of the former meeting were adopted.

Resolved, upon motion, That all members in arrears be removed from the register and published lists. The furnishing of agricultural papers with veterinary matter was condemned by the members. Dr. Torrance, the President, was prevented from attending on account of the death of his brother, and a resolution of sympathy was ordered sent him.

Resolved, Rutherford, Hinman, That the Secretary be instructed to communicate with the Western Veterinary Association, and to proffer that body the hearty sympathy and co-operation of the Veterinary Association of Manitoba in its timely efforts to elevate the status of the profession by lengthening the curriculum, and raising the standard of the matriculation, and final examination of the Ontario Veterinary College.

Resolved, That in view of the rapid strides with which the veterinary profession has recently advanced, and the increased amount of scientific knowledge rendered necessary thereby, it is advisable that the Ontario Veterinary College should make an effort to keep abreast of the times; that therefore applicants for admission to the college be required to pass a matriculation examination, which shall demonstrate their ability to read and write the English language correctly, and to understand the rules of arithmetic as far as decimal fractions; that the matriculation examination be conducted by a board of examiners entirely apart from and independent of the faculty of the college; that the curriculum be extended to three sessions of six months each, and that students be required to practise at least four months of each vacation with a duly qualified practitioner; that the examination for the diploma shall be upon the practical as well as the scientific attainments of the candidates; that the examiners be elected by the graduates of the college resident in Canada, in the manner similar to that in which the members of the Council of the Royal College of Veterinary Surgeons are chosen; that the Secretary be instructed to forward copies of these resolutions to Professor Smith, to Mr. Henry Wade, Secretary of the Arts and Agricultural Association, and to the various veterinary periodicals. These motions were carried.

Resolved, That at the next session of the Legislature of Manitoba this Association should ask for an amendment to the Veterinary Association Act of 1890, whereby sub-section (c) of section 4 shall be made to apply only to graduates of schools having a curriculum of at least three sessions of six months each, and striking out the words "in any part of Her Majesty's Dominions," where they occur in the aforesaid sub-section.

Dr. Price explained the Minnesota Veterinary Act, and considered this Province as one superior to any country in the world.

The subject of "Tuberculosis and the Tuberlin Test" was discussed at great length. Dr. Price, of St. Paul, opened the discussion, and was followed by Dr. Rutherford, of Portage la Prairie. (These papers will be published in the March JOURNAL.)

Dr. Odinman, Dairy Inspector for the city of Winnipeg, explained the working of the Act and the by-laws relating to the tuberculin test and tuberculosis. He thoroughly and firmly believed in the efficacy of the test and its reliability. He had injected over 1200 head, and had found very few cases whereupon post-mortem the test had failed to denote the condition of the animal. He explained shortly the Act, saying it was compulsory on all persons selling milk in the city to have their cows tested. They were charged a license of 50 cents per cow, and he was paid 50 cents per head for applying the test, the government furnishing the tuberculin. Those reacting

were branded on the left horn and those not on the right one with a number, and the milksellers instructed to at once isolate completely the diseased ones from his premises. He believed that in 90 per cent. the test properly administered was accurate.

Dr. Dunbar believed that two great importance was placed upon the contagious nature, and would not hesitate in drinking milk from tuberculous animals, but agreed with the other speakers as to the nature of the disease. He considered there was a tendency to cause too much excitement over the matter. He would like to see some reasonable and satisfactory arrangements made for the disposal of the animals condemned by the tuberculin test—a test in which he had confidence, and which he considered as good as any other test which had been discovered. He was in sympathy with the Association in its endeavors to bring about the eradication of the disease.

Dr. Young, having given an account of his personal experience with the disease, also as an inspector at the boundry, strongly recommended the test.

Dr. Thompson, Provincial Veterinarian, gave an excellent address upon the value of the test, the nature of the disease, and his experience. He strongly advocated the test, and hoped soon to see the government take the matter up as had the city of Winnipeg.

The counsel of the Association was instructed to prosecute all unqualified practitioners, which means all graduates in arrears to the Association, any persons practising as veterinary surgeons whose names are not on the register. Several other important matters were disposed of when the meeting adjourned.

W. J. HINMAN.

Secretary and Registrar.

MISSOURI VALLEY VETERINARY ASSOCIATION.

ABOUT forty members of the profession and friends attended the seventh regular meeting of the Missouri Valley Veterinary Association, at Kansas City, Mo., December 13, 1895, when a most interesting programme was fully carried out. President Stewart called the meeting to order at 7 P.M.

After roll-call and adoption of the minutes of the previous meeting, the papers were read and each one discussed separately. Dr. Harrison's paper was a report of a post-mortem examination of a black jack, and many specimens were shown that indicated the cause of death beyond a doubt; Dr. G. T. Netherton treated "Purpura Hemorrhagica in the Bovine Species;" Dr. L. M. Klutts, "Fractures Complex, with Miracles," also a case of protrusion of the bowels as a result of an injury; Dr. Charles Saunders, "Care of Mares in Foal;" Dr. L. R. Brady, "Canine Distemper;" Dr. S. Stewart, "Meat Inspection." All the papers were excellent, and showed great care in preparation, and were fully discussed, bringing out many valuable points.

In all respects it was an excellent meeting and all present were greatly benefited. It was fully demonstrated that no one can afford to miss any meeting of the Missouri Valley Veterinary Association, and the interest is constantly increasing. The next regular meeting will be held in Kansas City in February, 1896.

S. L. HUNTER, V.S., Secretary,
Fort Leavenworth, Kan.

ONTARIO VETERINARY ASSOCIATION, TORONTO,
CANADA.

THE annual meeting of this Association was held in the Veterinary College, Toronto, on Friday, December 21, 1895.

Mr. G. L. Robson, V.S., the President, opened the meeting with a most excellent address, containing many points of practical interest and much food for thought.

After the reading of the minutes of the last meeting, the Secretary's and Registrar's reports, and communications, a discussion ensued relating to the New Act respecting Veterinary Surgeons, passed in 1895, and a fine having been imposed under that Act upon a person for falsely claiming the title, which fine should have been paid over to the funds of this Association.

The following new members were duly elected: W. J. Morgan, V.S.; F. G. Hutton, V.S.; and J. Wagner, V.S.

Prof. Sisson, of the Ontario Veterinary College, read an excellent paper on "Undescended Testicle in the Horse." In the discussion that followed, Mr. Quinn, V.S., who has had much experience in the castration of "Cryptorchids," warmly complimented Mr. Sisson on the excellence of his anatomical description of the condition existing.

Mr. A. Crowforth read a very interesting paper on "Toxins and Antitoxins in Relation to the Cause, Cure, Prevention, and Diagnosis of Disease."

It was resolved that the Secretary should be instructed to get new copies of the Register printed, and to have incorporated in the pamphlet the "Act respecting Veterinary Surgeons," passed in 1895. These to be printed after April 1st of the incoming year, and a copy to be forwarded to each member of the Association.

The following are the officers for the ensuing year: Honorary President, Prof. A. Smith, F.R.C., V.S.; President, H. Hopkins, V.S.; First Vice-President, Major Lloyd; Second Vice-President, S. Sisson, V.S.; Secretary, C. H. Sweetapple, V.S.; Treasurer, W. Cowan, V.S.; Directors, J. Wende, W. J. Wilson, W. Morgan, J. F. Quinn, W. Steele, W. Gibb, A. Crowforth, and W. Burns; Auditors, C. Elliott and J. D. O'Neil; Delegates to the Western Fair Association, J. H. Wilson and J. D. O'Neil; Delegates to the Industrial Exhibition Association, Toronto, Prof. A. Smith and H. Hopkins. Mr. W. Cowan was nominated to represent the Association at the Central Farmers' Institute, but he explained that it would be better for the veterinary surgeons practising in the various localities to be placed on the lecturing staff.

C. H. SWEETAPPLE,
Secretary.

MICHIGAN STATE VETERINARY ASSOCIATION.

THE Michigan State Veterinary Association will hold its fourteenth annual meeting at Lansing, on the 4th and 5th of the present month. On the 5th there will be practical demonstrations of laryngotomy, ovariectomy, castration of cryptorchids, and other minor operations. Papers will be presented on the following subjects:

"Some Observations on Conception and Pregnancy in the Mare," by J. A. Dill, Ann Arbor; "The Veterinary Surgeon," by C. M. Higginson, Jackson; "Foreign Matter in Alimentary Canal," by Judson Black, Richmond; "Extemporaneous Talk on Tuberculosis and Other Things," by E. A. A. Grange, Lansing; and a paper by Dr. George C. Moody-Mason. Such a programme should enlist the interest and attendance of every progressive veterinarian in the State.

DISTRICT OF COLUMBIA VETERINARY MEDICAL ASSOCIATION.

A SPECIAL and general meeting was called by the members on Friday evening, January 10, 1896, in the banquet room, Williard's Hotel. The object of the meeting was to discuss the bill before Congress for the regulation of veterinary medicine and surgery in the District of Columbia, and also to enroll such graduates of the profession who were entitled and desirous of becoming members of the Association. Many veterinarians responded to the call. Dr. C. B. Robinson presided; Dr. Ford, Vice-President; Dr. Acheson, Secretary.

Dr. C. B. Robinson made very clear the advantages which could be gained by a thoroughly harmonious spirit among the members, and pointed out the great need of some form of legislative protection for the public against incompetency in veterinary practice. Dr. J. H. Adamson read a paper on "Organization," and received a vote of thanks for its efficiency. Dr. D. Buckingham also read an able paper on "Reports of Cases," which created a pleasant discussion. Among those present were Drs. C. B. Robinson, Ford, Acheson, Buckingham, Adamson, J. D. Robinson, Pointon, Bushman, Miller, Showalter, Grenfeld, Turner, Barton, Diedrich, and Rome.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THE regular monthly meeting was held at the usual place, Tuesday evening, January 14, at 8 P.M. President Hart called the meeting to order, and, in the absence of the Secretary, who came in later, he appointed Leonard Pearson Secretary *pro tem*. On roll-call Drs. Bridge, Hart, Hoskins, Lintz, McAnulty, James B. Rayner, and Rhoads answered to their names. As visitors were Drs. T. B. Rayner, Chestnut Hill, Philadelphia, Pa.; Harry B. Cox, Merchantville, N. J.; J. O. George, Camden, N. J.; and James Johnston, formerly of St. Joseph, Mo., of the Bureau of Animal Industry, Philadelphia.

The Committee on Legislation reported officially the appointment of Dr. Leonard Pearson as State Veterinarian, and the President calling on the latter he referred to the preliminary meeting of the Veterinary Sanitary Board, and asked for the views of the members as to what they considered would be the best plan of dealing with the questions which were presented for consideration, specially that of tuberculosis, referring to the inadequacy of the appropriations to do any extensive work toward stamping it out.

The Association approved of a resolution which the Board had adopted

in the case of suspected tuberculosis and the existence of contagious and infectious diseases, that the owner should employ a qualified veterinarian in his locality and have such animals examined, and upon the report of the veterinarian the State Board would act. This was done owing to the fact that it would be impossible for the State Veterinarian to investigate every alleged outbreak of disease throughout the State. In the discussion the influence of ventilation was freely reviewed by Drs. Bridge, James B. Rayner, Hoskins, and Pearson, bringing out many facts, showing that while ventilation was to be given important consideration, that in numerous instances the contagious and infectious character of the disease was so strongly indicated that these features must not be lost sight of. Dr. James Johnston cited a case of tuberculosis transmitted from man to a dog.

The bill for according veterinarians rank in the United States Army was read by Dr. Hoskins, and indorsed by the Association, after which a resolution prevailed that a committee of three be designated to draw up a suitable letter to be sent to the various members of the Senate and House from Pennsylvania, asking their support and consideration of the bill. The committee named were Drs. John Hart, Leonard Pearson, and W. Horace Hoskins.

Dr. W. L. Rhoads then read his paper on "The Structures of the Animal Hoof," which was listened to with a great deal of interest. The essayist brought out all the salient features connected with the growth and preservation of the foot.

Reports of cases being in order, Dr. Thomas B. Rayner reported an injury to a heifer calf occurring in September last, where a large piece of wood, about two and a half feet long, which was exhibited, had struck the animal between the eighth and ninth rib, glanced off, and, entering the abdominal cavity between the twelfth and thirteenth ribs, punctured the stomach, from which food ran out on the ground, accompanied by complete loss of power on the side of the injury. The piece of board was removed, the wound dressed with creolin and carbolic acid, and a compress-bandage adjusted, and healed kindly under this treatment. The paralysis of the hind limb remained from September until the 1st of January, when marked improvement commenced to assert itself, continuing up to the present time, the animal now being able to walk slowly upon it. Formerly the anterior face of the pastern was dragged along on the ground. Sensation remained in the limb at all times during the period of complete loss of motor power.

Mr. James B. Rayner reported a case of nearly complete severance of the tendo-Achilles, and the animal was abandoned, turned into a meadow, receiving little or no treatment, and recovery after four months being nearly complete. Also that of a grayhound with similar injury, with recovery, after a long period of time, without special treatment.

Dr. James T. McAnulty reported a case of azoturia in a gray gelding, weighing about thirteen hundred pounds. The animal had been ill for a week undergoing treatment for toe crack, developed the disease in a stable without any preliminary exercise. A ten-drachm ball of aloes was administered, followed by three-drachm doses of bromide of potassi, and four-ounce doses of sodium sulphate to encourage the action of the physic, and a stimulating embrocation applied to the back; glycerin clysters were also used, and a second eight-drachm ball of aloes, with one-drachm of nux vomica, was administered, but purgation was not established until the fifth

day. Slings were placed under the animal from which he was removed on the seventh day, when he was placed under tr. gentian, tr. nux vomica, sweet spirits ætheris nitrosis, aa three ounces; one ounce three times daily. Making a complete recovery.

Dr. Pearson reported a second case developing in a stable without any preliminary exercise, where the paralysis was confined to the shoulder; and a similar case, where the loss of power was of the shoulder, was reported by Dr. Hoskins.

The Board of Trustees reported favorably upon the application of Dr. Enoch H. Moore, and he was unanimously elected to membership.

Dr. Hoskins reported the fifth outbreak of cerebro-spinal meningitis in the same stable, occurring during the past ten years, after which, at 11 P.M., the meeting adjourned.

NEW YORK COUNTY VETERINARY MEDICAL ASSOCIATION.

THE regular meeting of this Association was held on Tuesday, January 7, 1896, at 8.45 P.M., with the President, Dr. Huidekoper, in the chair.

The Secretary being delayed, Dr. Neher was requested to act as Secretary pro tem., and proceeded by calling the roll, to which the following members responded: Drs. Amling, Bretherton, C. C. Cattnach, J. S. Cattnach, J. J. Cattnach, Delaney, Dixon, Ferster, Foy, Gill, Hanson, Huidekoper, Neher, O'Shea, and Sherwood.

After which the President appointed to act as Board of Censors H. D. Gill, H. D. Hanson, J. S. Cattnach, J. E. Ryder, and J. H. Ferster, and as a Committee on Legislation Arthur O'Shea, J. E. Ryder, S. S. Field, Herbert Neher, and F. W. Turner. There being no papers, Dr. Sherwood spoke a few words on mange, and also agreed to read a paper at the next meeting.

Dr. Ferster then reported a "Case of Azoturia with Partial Paralysis in the Hind Leg as a Sequela," and questions if cases will recover. Dr. Amling reported two similar cases.

Dr. Neher reported "Six Cases of Azoturia," with similar symptoms in forelegs. At this point the Secretary arrived and took his chair, and a general discussion on azoturia and its treatment continued.

Dr. Ferster asked the chair for his after-treatment in azoturia when any of the above sequelæ remained, and he recommended full doses of potassii iodidum for a time and turning the patient out.

Drs. Neher, O'Shea, and J. S. Cattnach gave their views on treatment in different stages of the disease.

The President then asked the meeting their pleasure in regard to having the minutes of the previous meeting read, now that the books were on hand, and it was moved and seconded that it be deferred until the next meeting.

The question of "Tetanus and its Treatment" next came up and was discussed generally by the members.

Dr. O'Shea reported recovery after the use of nicotine in full doses on the tongue, followed by digitalis and whiskey.

Dr. J. S. Cattnach reported a case in which recovery followed one injec-

tion of 3 grains of morphine. Dr. Ellis reported a case in which all the characteristic symptoms were well marked, but not far advanced, in which recovery followed one injection of 25 c.c. tetanus antitoxin.

Dr. Gill mentioned a similar case in which recovery followed an injection of diphtheria antitoxin. It was moved and seconded that the discussion close. Carried. It was moved and seconded that the meeting adjourn. Carried.

ROBERT W. ELLIS, D.V.S.,
Secretary.

CHIT-CHAT.

The Ætna Life Insurance Company of Pennsylvania, with headquarters at Philadelphia, and which recently passed into the hands of a receiver, almost daily conducts suits against former stockholders for unpaid assessments. With but one exception so far, this has been the history and end of every live-stock insurance company organized in Pennsylvania.

One-third of the graduates failed at the December examination of the Pennsylvania State Medical Board.

William J. Waugh, V. S., Third Cavalry, U. S. Army, was a recent visitor, as a court-martial witness, at Ft. Leavenworth, Kan., where a medical officer was being tried by a general court-martial on charges preferred by a fellow-officer of the Medical Department of the U. S. Army.

William Nicholson, V. S., a recent graduate of the Ontario Veterinary College, has located in Allegheny, Pa., and bids for public patronage by billing the town with yellow placards 14 x 22 inches, with very black letters.

Dr. Leonard Pearson, consulting meat inspector to the Department of Public Safety in Philadelphia, has tendered his resignation, to take effect on the appointment of his successor.

Pittsburg is worked up over the death of a large number of elk in Schenley Park, as upon whom they shall lay the blame. From bad sanitary conditions, it appears the elk became infested with parasites, and lack of attention and improper food are said to have contributed to the great fatality among them.

A school of anatomy and scientific horseshoeing has been established in Chicago, under the direction of the Master Horse-shoers' Association. Prof. Hughes, of the Chicago Veterinary College, opened the course by a lecture on the anatomy of the horse, which composed one of the series which he will deliver. Dr. Frank Allen delivered the second lecture of the course.

The *Humane Advocate* enters the field of journalism with the incoming new year, at Pittsburg, Pa. It is well printed, and will endeavor to serve for the people of that section what similar journals are doing in other cities. It has identified with it, as veterinarians, Drs. E. J. Carter and James A. Waugh. The first number contains articles from the pens of Veterinarians Hancock and Waugh. Editorially, the *Advocate* will be directed by Misses Kyle and Docking.

The New York College of Veterinary Surgeons reports a very nice case of filaria oculi, which will be operated upon after proper preparation. It was sent to the college by Dr. P. C. Hogg, Manhasset, L. I.

A recent issue of the *Pittsburg Medical Review* contains a very interesting article from the pen of Veterinarian J. Stewart Lacock, V. M. D.; Allegheny, Pa., describing a post-mortem on a rabid canine, with notes on inoculation of virus into rabbits, in Pittsburg Biological Laboratory, in connection with the Bureau of Health.

Dr. C. A. Cary, as Veterinarian to the Alabama Agricultural Experiment Station, has just issued Bulletin No. 67, on the subject of tuberculosis. He very thoroughly covers the ground in the interest of the people and live-stock owners of his State, and we hope and believe that it will lead to control measures of importance and great value to all concerned.

Pittsburg has just accepted a gift of one hundred thousand dollars from Mr. Christopher Magee, one of her warm and generous-spirited citizens, to be used in establishing a Zoölogical Garden in Highland Park, the latter overlooks the Allegheny River and Valley, which makes it a very suitable location for such a purpose.

Experiments are being made with the germ recently cultivated of distemper in dogs.

Prof. Adami has recently solved the cause of the obscure disease familiarly known to veterinary readers as the "Pictou Cattle Disease." It is of germ origin.

Truth is a virtue, but a mighty awkward one to handle in a horse trade.

A libel suit is under way involving several veterinarians, who have expressed opinions as to the soundness of a pair of horses exhibited at both the New York and Philadelphia shows, and which were sent from the show-ring as unsound.

A suit for damages resulting from the feeding of Indian peas, among a stable of horses in Birmingham, England, has been decided in favor of the plaintiff.

The horse is filling still another grand field at the Pasteur Institute, Paris, in serving for the preparation of another serum, for combating the streptococcus microbe, the now considered agent of production of erysipelas, puerperal fever, etc.

The so-called "corn-stalk disease" has been quite prevalent throughout certain districts in Iowa during November and December.

U. S. V. M. A. (State Secretary's Report): Montana reported five graduates within her borders; a graduate succeeding a non-graduate as State Veterinarian. Only two veterinarians in general practice. No inducements were offered for those wishing to engage in general practice.

The production of tetanus, antitoxin, and mallein has been commenced at the New York College of Veterinary Surgeons.

Argentina threatens to become America's strongest competitor in the world's markets for supplying animal food-products.

St. Paul and Minneapolis will adopt rules and regulations governing inspection of dairies supplying the twin cities with milk, similar to those in force in Winnipeg, Manitoba.

Kansas City, Mo., is already in the field for the 1897 meeting of the United States Veterinarian Medical Association.

The New York Veterinary College Laboratory is producing diphtheria antitoxin of over 3000 units. This, in the director's opinion, is due to improvements in the process of producing the toxin, which is made at the laboratory of the New York Health Department under the direct supervision of Dr. Herman M. Biggs. A year ago the strongest, according to the foreign process they could get, was $\frac{1}{20}$ th strength, to-day they are using $\frac{1}{200}$ th strength, which is ten times as strong, and makes a very considerable difference in the quantity injected, and seems to produce very much stronger antitoxin.

PERSONAL.

Veterinarian Tremaine, of Bridgeton, N. J., takes an active interest in secret societies. He was recently elected to one of the highest offices in the Imperial Order of Red Men.

Jno. Doris, Jr., D.V.S., Veterinary Inspector, Bureau of Animal Industry, U. S. Department of Agriculture, with station at Pittsburg, Pa., has tendered his resignation, which was accepted December 31, 1895. He has a well-equipped and modern veterinary hospital, and will hereafter devote his entire attention to private practice.

George Jobson, V.S., D.V.S., who was for three years Resident Surgeon and Professor of Anatomy at the National Veterinary College and Hospital in Washington, D. C., has located in private practice in Oil City, Pa., and is veterinarian to the Miller & Sibley stock farm at Franklin, Pa.

J. Stewart Lacock, V.M.D., of Allegheny, Pa., has opened a nice office, centrally located, in that city, and has secured the veterinary practice of the Department of Public Safety, which includes the fire, electric, public highways, police, and water bureaus.

Dr. W. J. Reagan, of Philadelphia, graduate of the veterinary department of the University of Pennsylvania, has recently passed a very successful examination for inspector in the Bureau of Animal Industry, and has been assigned to duty in New York.

Dr. R. R. Dinwiddie, of Arkansas, has been spending a season in St. Louis, Mo.

Henry J. Hancock, M.R.C.V.S., and James A. Waugh, V.S., are contributors to the first number of the *Humane Advocate*, just established by the Western Pennsylvania Humane Society of Pittsburg, Pa.

C. D. Smead, V.S., of Logan, N. Y., conducts the veterinary column of the *National Stockman and Farmer*.

Veterinarian E. R. Voorhees, of New Jersey, will shortly accept the post of veterinarian at the New York Agricultural Experiment Station, Geneva, N. Y., vice Dr. Peter Collier, resigned.

Dr. Donald McIntosh, Professor of Veterinary Science, University of Illinois, addressed the Illinois Swine-breeders' Association on January 8th, on "Health of Hogs"¹

Dr. A. F. Peters recently addressed the Nebraska Dairymen's Association on "Anthrax." He recommended preventive vaccination in communities where the disease was widespread.

Dr. R. A. Archibald, of Sacramento, Cal., has removed to San Francisco.

Dr. James Johnstone, of St. Joseph, Mo., has recently been appointed to a position as assistant inspector, and been assigned to a place at the Philadelphia abattoir.

Dr. W. J. Hinman, of Winnipeg, Manitoba, fills the rôle of city veterinarian for that municipality. In connection with important city ordinances governing the milk-supply the position has become a very important one.

Dr. P. H. Seltzer, of Lebanon, recently addressed the Farmers' Institute of York County, which was held under the direction of the State Board of Agriculture.

Drs. J. Miller, of Ottumwa, and H. G. Moore, of Ames, Ia., have been appointed to assistant inspectorship in the Bureau of Animal Industry.

It is gratifying to know that the many favorable laws in Manitoba governing matters pertaining to the true growth and protection of veterinarians have been strongly aided by the presence, as members, in Manitoba's Parliament, of Veterinarians J. G. Rutherford, Dr. H. McFadden, and D. McNought.

¹ Will appear in March issue of JOURNAL.

Dr. O'Shea, of New York City, has gone to Albany to appear before the Committee on Public Health to defeat a bill introduced by Representative Cole, of Syracuse, extending the time of registration in New York State.

We learn that Professor Liautard intends to examine his students in anatomy the latter part of January, after which he sails for France for an indefinite stay. Prof. R. R. Bell is to take his place.

Mr. Roberge and Dr. Ferster will deliver a series of lectures at the Toronto Veterinary College, commencing January 22d, on "Balancing a Horse's Foot."

Thomas Giffen, M.R.C.V.S., of New York City, has adopted for his professional calls the latest design of rubber-tired hansom cab.

Dr. O'Dea, Casanovia, N. Y., was a New York visitor recently, calling at the various colleges and upon a number of practitioners.

Dr. W. L. Baker, of Cortlandt, N. Y., wants to sell his practice. On account of the ill-health of his wife he is obliged to leave for a milder climate.

Dr. Robert Richards, New York City, was lately elected Master of the Eastern Star Masonic Lodge, vice Dr. A. K. Robertson, of Brooklyn. There are between fifteen and twenty veterinarians members of this lodge, and it has been dubbed "The horse-doctors' lodge." Dr. Richards recently met with an accident, and was thrown from his wagon and considerably bruised.

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NOTES ON VETERINARY EDUCATION AND INTELLIGENCE, CONCERNING VETERINARY AND AGRICULTURAL COLLEGES.¹

BY W. B. NILES, D.V.M.,
AMES, IOWA.

THE year just passed has been an eventful one in the history of veterinary education in this country. More changes have occurred in our veterinary colleges than in any previous year; many of which have led to great improvement and will have a far-reaching effect. The action of this Association in raising the requirements for membership is the principal cause of most of these changes. The most earnest advocate of this amendment to our By-laws did not anticipate that its passage would have such a speedy and decided effect upon the advancement of veterinary education. While but three years have elapsed since its passage, all the colleges in this country but three have conformed, or are contemplating conforming, to the requirements of our Association.

In a previous report on veterinary education I divided our colleges into two classes, viz.: State schools—those supported by the State—and private colleges—those incorporated and supported by private parties. In this paper I shall adhere to the same classification.

From the catalogues of the respective colleges and from replies kindly sent in answer to my letters of inquiry I have received the information embodied in these notes.

¹ Read before the Annual Meeting of the U. S. V. M. A., Des Moines, Iowa, September, 1895.

The State colleges having for several years had a course of three years, of about eight months each, have during the year mainly improved by enlarging the course of study and increasing the teaching facilities. As these colleges were well equipped and had long courses of study, the changes have not been so great as in the schools of the other class. The two most important items of interest in connection with this class are the reported closing of the Veterinary Department of the Ohio State University, and the starting of a State veterinary college in New York in connection with Cornell University. It is with much regret that we receive the news of the closing of the veterinary department in Ohio. After several years of hard labor the department had been placed in a position to do good work, work which the State of Ohio can ill afford to lose. Believing that the State schools, with their long course of study, were largely responsible for much of the recent advancement of veterinary education in this country, we also think the profession can ill afford to lose the influence of such a school.

All having the advancement of the profession at heart will be pleased to learn that a veterinary department supported by the State will soon be opened at Cornell University, New York. The editor of the *Review*, our worthy member, Dr. Liautard, said in an editorial notice of this school: "We cannot but feel proud of the step, which will tend to advance the study and teaching of veterinary medicine, which must necessarily be benefited by the prestige of such an excellent university as Cornell." In another place he expressed the opinion that other States will probably within a few years follow the example of New York, and that such action is to be hoped for. I quote as follows from a letter by Dr. Law relative to the curriculum of the proposed department: "While I cannot speak of the curriculum as definitely settled, my own desire is to commence with a four years' course and make it as thorough and comprehensive as circumstances will permit. Quality, rather than quantity, would be my aim, as I feel assured that the country has a right to demand the best results, and that one good man will be of far more value than ten indifferent ones." A department with such a curriculum and aim will surely be an important factor in advancing veterinary education.

The California College, about which many of us have heard, has not that intimate connection with the State university necessary to rank with the State college. In reply to my letter of

inquiry, the President of the University of California states that the college is an "affiliated department," having its separate board of trustees and electing its own professors. While we would like to see the school a full-fledged offspring of the State, we are glad to note that it opens as a three-year school, and promises to aid rather than retard the advancement of veterinary medicine.

Many changes may be noted in connection with the private colleges. All of these from which I have received information, with the exception of three (the Chicago Veterinary College, the United States College of Veterinary Surgeons, and the Ontario Veterinary College), have lengthened, or contemplate in the near future lengthening, the course of study to three years. The three excepted have given no intimation of having in view the lengthening of the course of study. It is worthy of note, however, that in two of these some improvements have been made. At the Ontario school it is stated that instruction in the collateral branches is keeping pace with the most recent investigations. This is certainly an improvement, if true. The Chicago college has added the State veterinarian of Illinois to the teaching staff and made some other minor changes. While changes tending to improve the facilities for teaching the collateral branches may have been made, the fact remains that two years of six or seven months each is far too short a time in which to impart a sufficient knowledge of veterinary medicine and surgery, and until these schools lengthen their curricula they will retard rather than advance veterinary education.

Two private colleges, the National, of Washington, and the Ohio, at Cincinnati, advertise to increase the length of the course to three years after the coming session. The Dean of the Indiana Veterinary College writes that "We trust shortly to increase the term of study to three years." The Kansas City College has undergone complete reorganization, and offers a three years' optional course, which it stated will soon be made compulsory. The indications are that this school will take good rank in the near future. The New York College of Veterinary Surgeons and School of Comparative Medicine has undergone many changes for the better during the year. Notable additions to the faculty are Drs. Huidekoper and Hickman; the former occupying the Chair of Anatomy and Surgery, and the latter that of Diseases of Cattle and Obstetrics. The course of study has been lengthened to three years, and graded. With

these changes the college should from now on become an important factor in the field of veterinary science.

Regarding changes at the American Veterinary College, which is the first private institution to lengthen the course of study, Dr. Liautard writes "that the facilities for instruction are constantly increasing; that practical work in connection with microscopy, chemistry, etc., is increased more each year; and that the requirements for admission are more severe, this being regulated by a State law recently passed and applying to all veterinary schools in the State of New York."

The McKillip Veterinary College has completed its faculty and in other ways perfected the organization. It is pleasing to note that this school will avoid the great error of some of our private colleges—that is, of allowing anyone to enter, and, almost without exception, all who have entered and remained two years to graduate. The entrance examination is in accordance with that recommended by the Association of Faculties of Veterinary Colleges, and careful examinations are held at the close of each session. It is to be hoped that the example of this and the other private schools that have improved so much may have a wholesome effect on others that have not yet gotten out of the ruts.

In connection with changes in course of study, it should be noted that many of the colleges have recognized the increasing importance of sanitation and demand for sanitarians, and have added instruction in meat- and milk-inspection to the course, and otherwise improved the work in sanitary science.

It seems to the writer that the report of this committee would be incomplete without reference to veterinary education at our agricultural colleges. Of the forty-seven agricultural colleges in the United States twenty-three have a professor of veterinary science; seven others give instruction by employing some outside veterinarian to deliver lectures; and two have a veterinarian on the experiment station staff, who gives no instruction in the college. The other fifteen give no instruction in veterinary science, and have no veterinarian engaged in station work. Some of these intimate that a chair of veterinary science will soon be established. Only two of the entire forty-seven have endeavored to establish the work and failed. In those having veterinarians in the faculty, the work consists in giving instruction in the rudiments of the science to agricultural students and such special students as care to take the work. The character of the

instruction given is the same in all, only differing in the amount of time devoted to the work. The object in view is to teach the student how to properly care for animals; how to treat some of the more common ailments that must necessarily be looked after by the owner or go without attention, and by the acquirement of this knowledge to learn to understand the proper relations of the educated veterinarian to the live-stock industry. If the student of agriculture can be made to understand that in order to treat intelligently and successfully diseases of our domestic animals, it is necessary to prepare ourselves by long and careful study—in short, that veterinary medicine *is a science*—he will at once distinguish between the educated veterinarian and the empiric. So if the professors of veterinary science only succeed in imparting this single idea they are doing much good. Some may ask, Does the teaching in agricultural colleges tend as indicated, or is the tendency toward empiricism? I unhesitatingly answer that the instruction received does not tend to produce empirics, but, on the contrary, as far as my observation goes, always tends to a higher appreciation of the science, and impresses the student with his incompetency to deal with all classes of cases. I think all who are familiar with veterinary education in agricultural colleges will agree with me in this statement. Such being the results, I attach great importance to the work done by the veterinary professors in our agricultural colleges, and believe it will become a very important factor in veterinary education, particularly in the education of the public to an appreciation of the true relation of veterinary medicine to animal industry. As a sample of what is taught, with the time devoted to the work, I quote from a letter by Dr. McIntosh, of the Illinois Industrial University: "The line of work done in my department are lectures on the anatomy and physiology of the domestic animals during the fall term (three months). In the winter and spring terms (six months) the diseases of farm stock and materia medica are taught. There is a free clinic which supplies us with abundant material on which to study the various ailments." To further illustrate, in Indiana the work is somewhat more extensive, and consists, as I have been informed by the veterinarian in charge at Purdue University, of "anatomy and physiology, with special reference to their value to the stock-raiser." "Stable sanitation, care of breeding animals, and obstetrics are treated quite fully." "Minor surgical operations are taught and the common diseases

described." "A free clinic furnishes abundant material for demonstrations." My experience has been that our agricultural college students from these departments make the very best of students for the veterinary college, and the writer believes that the chairs of veterinary science in our agricultural colleges should be in close touch with veterinarians of the country, and receive their hearty support.

State veterinarians and meat-inspectors, in short, all veterinarians holding public positions, are a factor in advancing veterinary education, and deserve mention in this paper. They can assist much in paving the way for the enactment of sanitary laws which will not only affect the health of animals, but will save human lives as well.

Much more might be said, but as my paper is already longer than I intended I will not prolong it further. In closing I wish to kindly thank all who have so willingly assisted me by sending catalogues and letters in answer to my inquiries.

HOW SHALL THE PRACTITIONER CONTINUE HIS EDUCATION ?¹

BY DR. R. A. ARCHIBALD,
MEMBER OF COMMITTEE.

FOR the benefit of the young veterinarian who is endeavoring to gain an enviable position as a successful practitioner I wish to make a few suggestions that, to a certain extent, may be foreign to the question under consideration, and at the same time may not directly pertain to veterinary science; still, in my estimation, a knowledge of these matters is very essential for the practitioner to acquire in connection or on top of his college education. For convenience I propose to deal with this matter under three heads: First, the practitioner should learn to do his duty to his clients; second, his duty to his colleagues; and, third, his duty to himself.

The veterinary practitioner is of necessity thrown in contact with all classes and varieties of people, and it is necessary for

¹ Read as part of Committee on Intelligence and Education's Report at the Annual Convention of the United States Veterinary Medical Association, at Des Moines, Iowa, September, 1895.

him to do his duty under many and varying circumstances. It will be seen, therefore, the necessity of studying human nature in its various forms, moods, and peculiarities, so he may be prepared to appreciate and encourage human virtues, and meet with good temper, tact, and success, human frailties in all their many degrees and phases. The treatment of the client is just as important, and in many instances more important, than the treatment of the patient. It is absolutely necessary for him to take a deep interest in his patients; he should avoid if possible considering his patients as mere cases of disease or injury, and by showing an interest and acuteness of feeling and sensibility for the patient he will naturally in the majority of instances retain the confidence of his client. In all connections with his client he should act upon general honest principles, and should exercise tact and discretion in recommending treatment which his knowledge teaches him to be right, more especially in cases where treatment is unnecessary; for if the practitioner does not exercise some considerable tact and patience in connection with the treatment of an imaginary disease, the result would be that his client would place the case in the hands of some unscrupulous parasite, who might, by encouraging the weakness and peculiarities of the owner, succeed in lowering the reputation of the practitioner in that community. It will be readily seen that the requirements of a knowledge of the proper method of dealing with different clients is by no means the least important matter which the practitioner must strive to attain.

We will now consider the practitioner's duty to his colleagues. There is generally a feeling among young practitioners against consultations, either private or public. It is necessary for them to learn the error of such a view. There is no greater mistake a practitioner can make than to decline consulting with a fellow-practitioner when a difficulty occurs in a case or when a client becomes impatient. Young practitioners are generally apt to think that when a consultation is requested that it denotes a lack of confidence in either the client or the attending practitioner himself, when very probably such is not the case; but whether it be or not they will best forward their own interests by cheerfully agreeing to a consultation. It is possible that a consultation may involve a difficult and delicate question sometimes, as to the honest expression of opinion in reference to the real condition of a patient, the exact cause of disease, etc.; but these matters can be properly and safely

adjusted by the exercising of good, thoughtful judgment, and as a result confidence is restored to the mind of the client. Of course, where a consultation is requested it will be policy for the attending practitioner to endeavor to have his client procure the services of a professional man who is versed upon professional ethics.

A practitioner's duty to himself is the most important matter of all upon which he should educate himself. It consists chiefly in retaining his self-respect. Every practitioner has knowledge pertaining to his patients which is of a strictly private character, and except in cases where dishonesty is intended on the part of the client, no practitioner is justified in disclosing them. He should beware of gossiping in connection with his practice. Gossip may be all very well in social matters, but it should be strictly excluded from all matters of a professional nature. Frequently inquisitive individuals will try to extract information regarding the condition of a patient, etc. The practitioner in such a case should positively refuse to discuss such questions.

Punctuality is a habit that can and should be acquired by the practitioner who hopes to make a success. We have known of several instances where the practitioner has lost that lucky chance which is not unfrequently the beginning of future success.

Be courteous. Few men are more tried than members of the veterinary profession. We realize that human nature under all circumstances in which the veterinarian is placed cannot always command a sweet and unruffled temper, but he should learn to do his best in order to retain his self-respect. There is a popular idea that veterinarians are continually quarrelling among themselves. This idea is usually an exaggerated one, but, unfortunately, there are some grounds for it. Two causes appear to act as exciting influences in producing professional disputes. One is that clients too frequently forget the services of their veterinarian and in their anxiety, or in search of novelty, rush from one practitioner to another without proper consideration for their veterinarian's feelings. The other is that in some localities professional competition is very active, and where many are struggling for work and existence friction becomes serious. The practitioner, in order to retain his self-respect, should conform strictly to the rules laid down under the heading of professional etiquette, which is nothing more or less than the Golden Rule : "Do unto others as he would that they should do unto him."

The veterinarian should be always ready to assist a brother practitioner, providing he is not outside the proper professional standard. Veterinarians, like other individuals, will receive insults, but in the majority of cases the practitioner and the individual have themselves to blame for it. The practitioner should learn to know when the limits of professional endurance are passed and when it is becoming for him to insist upon a proper recognition of himself and his profession.

Whatever difficulties and anxieties the practitioner may meet with in practising his profession, he should bear in mind that the highest and noblest aim of his profession is to assist and relieve the suffering animal. In carrying out this high principle he may be imposed upon, and he may meet with ingratitude and insult, but he can rest assured that if he practises his profession in a thoroughly honest and conscientious spirit he will receive in return demonstrations of the finest feeling of human nature and tokens of truly sincere gratitude which will more than counteract his unpleasant experiences.

All this and more will the young practitioner have to add to the store of knowledge gained at college before he can lay claim to the enviable position of a successful veterinarian.

REPORT ON SOUTHERN CATTLE FEVER.¹

BY W. H. HARBAUGH, V.S.,
RICHMOND, VA.

DURING the past season I was unable to spare the time necessary to devote to any extended experiments in connection with this disease, but I did not entirely neglect the subject. As you will no doubt remember, I did not question the discoveries of the Bureau in regard to ticks causing the disease outside the permanently infected places, and, further, I expressed full belief in Smith's protozoal micro-organism. For the purpose of being better qualified to study the disease and its phenomena I confined my observations to the tick theory, and made as close a study of the ticks as possible under the circumstances. I was peculiarly fortunate in this respect in having the assistance of

¹ Read before the Virginia Veterinary Medical Association, Richmond, Va., January 2, 1896.

Dr. Cooper Curtice, to whose studies we are indebted for a detailed life-history of the cattle tick, the *boophilus bovis*, which is, so far as known at present, the only carrier of the cause of Texas fever.

After being able to distinguish the *boophilus bovis* from the other varieties of ticks, I made collections of them which I sent to different veterinarians outside the territory where the tick naturally exists. The arrangement with these veterinarians was to place the young ticks, hatched from the eggs of the adult ticks I sent them, on a susceptible cow and report the result, or, in other words, to repeat the experiments of the Bureau in detail.

Prof. E. P. Niles was the only veterinarian who took the trouble to carry out the experiments as agreed upon. For one reason or another the other ticks sent out were not used. The ticks I sent Prof. Niles were taken from cattle on a place where there has not been a case of the disease for at least seventeen years; but there have been no susceptible cattle added to the herd since then, the herd being kept up by breeding the cattle raised on the place. This course was found necessary by the owner. Before he commenced to breed all his own cattle he lost every animal introduced among his herd; about twenty cattle were sacrificed in his endeavors to add fresh blood to his herd.

Following is Prof. Niles's report of the experiment:

Subject: A short-horn cow about ten years old.

October 10th. Infected with a large number of young ticks.

11th. Infected with ticks. Temperature, 2 P.M., 101.2° F.

12th. Temperature, 9 A.M., 100°.

14th. Infected with ticks. Temperature, 2 P.M., 100.8°.

15th. Infected with ticks. Temperature, 3 P.M., 101.2°.

16th. Infected with ticks. Temperature, 3 P.M., 100.8°.

17th. Temperature, 5 P.M., 100.8°.

19th. Infected with ticks. Temperature, 5.30 P.M., 101.6°.

One pair parasites in blood.

20th. No more ticks placed on cow. Temperature, 5.30 P.M., 101.2°.

21st. Temperature, 3 P.M., 101°.

23d. Temperature, 3 P.M., 101°. Number of parasites in blood.

25th. Temperature, 2 P.M., 103.4°. No record of parasites.

26th. Diarrhœa intense. Temperature, 9 A.M., 105.7°; 9 P.M., 107.4°. Only one pair parasites seen in blood, as mount was not properly prepared.

27th. Temperature, 10 A.M., 106.2°; 6 P.M., 106.6°. Few parasites seen in blood; mount not good. Profuse diarrhœa; feces colored with bile.

28th. Temperature, 9 A.M., 105.2°; 5 P.M., 106.4°. Number of parasites in blood; diarrhœa continues.

29th. Temperature, 12 M., 104.2°; 5.30 P.M., 104°. Great number of parasites in blood; bowels torpid.

30th. Temperature, 8.30 A.M., 101.2°; 1.30 P.M., 99.2°. Great number of parasites in blood; bowels torpid.

Cow killed on evening of 30th in dying condition. Post-mortem examination disclosed: Spleen greatly enlarged, broken down, and apparently like a mass of clotted blood when cut into. A number of petechial spots in the left ventricle of the heart. Kidneys enlarged and very dark in color. Gall bladder greatly distended with bile, as described on p. 31, Bureau of Animal Industry Report on Texas Fever. Bladder filled with very dark urine; do not know that urine was dark before death, but have every reason to suppose it was, as did not have opportunity to observe except in early stage of fever.

At the time of the experiment Prof. Niles sent me a specimen of the blood of the affected cow, which is now under the microscope for your inspection. It is a remarkably fine demonstration of Smith's micro-parasite.

Thus it will be seen that Prof. Niles's experiment confirms in every respect the work done by the Bureau. The work of the Bureau was followed in making this experiment, and, of course, nothing original is claimed for it. But it should remove from our minds any doubts as to the part played by the tick in at least being a carrier of the cause of the disease; and it may be the only carrier to places outside of the permanently infected sections, but I am still of opinion that there are other sources of infection within the permanently infected regions.

In the paper I read before this Association one year ago I called your attention to the fact that all Southern ticks were not dangerous. There are different varieties of ticks that infest animals on pasture in the South, but the species called by Dr. Cur-tice the *boophilus bovis* is the only one which is known to inoculate cattle with the micro-parasite of Texas fever. All other

varieties are at present considered harmless. I have preserved different species for your inspection.

I must also remind you that on certain farms the *boophilus bovis* ticks do not appear to be capable of conveying the disease to susceptible cattle. On two farms in particular, a short distance below this city, on which are kept between 400 and 500 cattle, and on which susceptible cattle from the North and elsewhere are constantly being added at all seasons of the year without any regard to their susceptibility, the *boophilus bovis* species is numerous, but so far as known there never has been a case of the disease since these places were under their present ownership.

The owner attaches no importance whatever to the ticks. He does not believe they have anything to do with the disease. He has, however, his own ideas in regard to the disease and its prevention, and has perfect faith in a compound which he gives to the cattle as a preventive during the season of the year in which the disease may exist. This compound is a mixture of salt, copperas, sulphur, and nitre. It certainly does not prevent the ticks infesting his places, as there are as many ticks on his cattle as are seen on any other average herd. Other farmers have used this same compound, but their cattle became affected with the disease and died notwithstanding its use. This compound is an ancient one in this section, and is, I believe, generally known as the "old Ruffin recipe." Next season I will test its efficacy on a suitable farm.

There can be no doubt as to the genuineness of the variety of ticks which are on these places, as Dr. Curtice visited both farms and collected the ticks and sent them to Washington for experimental purposes, but I am sorry to say that he has informed me since that they failed to get a brood of young ticks from them. During the coming season I will make it my duty to collect ticks from such places to ascertain if their young will produce the disease elsewhere.

If it is established that ticks of the *boophilus bovis* species from such places cannot produce the disease, or, in other words, if it can be proven that on some places they are really harmless to susceptible cattle, such a fact will at least be a point in favor of the belief that the tick is an accidental carrier of the micro-parasite. The fact that the disease is transmitted to susceptible cattle with the blood of infected animals is a point in the same direction. Also, the fact that susceptible cattle may be infested

with the ticks for several years in succession and do not develop the disease till the second or third year, to some extent signifies that the tick is not at all times the carrier of the disease.

If the infectious principle of the tick was of the same nature as the venom of a serpent we would not expect to find a micro-parasite as the necessary infecting principle, but as we must have the micro-parasite in order to establish the disease it is evident that it is possible for the parasite to gain access to the blood of susceptible cattle by other means than either the tick or the transmission of affected blood, which are, so far as known, the only authenticated ways the disease has been produced.

I have never heard it claimed that the tick originates the micro-parasite, but if we would accept the proposition that the tick was the only cause of the disease it would amount to almost the same thing as a claim that the tick originated the parasite. Of course it is possible, but scarcely probable, that this micro-parasite may be an organism peculiar to the tick, having to spend at least a part of its life within the tick in order to complete its round of existence. Such ideas are mere speculation, however, as next to nothing is known of the life-history of the micro-parasite.

One adult tick deposits an almost countless number of eggs from which as many young ticks are hatched, and as it is impossible for all of them to get on cattle a very large percentage must necessarily perish near where they were hatched and thereby liberate the parasites in large numbers. It is a question whether these parasites on being taken into the susceptible cow with the food or water can gain access to the blood and produce the disease. The gastric juice may guard against this source of infection, but still the question is by no means settled by the experiments of the Bureau in which they introduced the young ticks into the susceptible animals by way of the alimentary canal.

Of the greatest importance of all in connection with the study of this disease is a knowledge of the source of the protozoal parasite. At present we know absolutely nothing in regard to it. It may be said that the tick gets the parasite from an animal gradually inoculated with it by being raised on a permanently infected place, but, if so, where does the cow get it originally? On the other hand, if the cow is made immune by the tick, where does the tick get the parasite originally? It is

evident that the source of the parasite is the most important feature yet to be discovered.

Recording the effect on animals placed on tick-infested farms was one of the lines of investigation I pursued during the past season. Some animals developed the disease after a few weeks' exposure, and other susceptible animals showed no signs of sickness, although well infested with ticks; while animals that had been on the places one, two, or three years, and escaped the disease in former years when cattle on the same pasture had died with it, developed the disease and died this year.

During the past season I met with cows affected with the disease on which I could discover no ticks, and upon inquiry the owners and attendants informed me that they had seen no ticks on any of their cattle. I have visited such places a month or six weeks afterward and have found ticks on all the cattle, susceptible and non-susceptible, but found no Texas fever.

Since I have had experience in hatching young ticks I will not say that a cow has no ticks on her; I can only say that after a diligent search I did not discover any; as the young ticks just hatched have the appearance of very small specks of dirt it is impossible to recognize them on a cow till they become large enough to be distinguished.

As the tick is the carrier of the cause from the places permanently infected, it must be admitted that the disease is one that may be invariably prevented in non-infected places if sufficient precautions are taken to free the cattle from ticks. Lice, mange, and scab insects are destroyed on animals, and there is no reason why ticks cannot be kept off animals.

If the disease depended solely on the presence of ticks there would be no such thing as a permanently infected place in this region. A severe winter may free a farm of all ticks.

During the early part of the fever season there was but few cases of the disease in Richmond, and it was also noticed that ticks were hard to find; but during the latter part of the season the fever prevailed to a great extent, and the ticks were still noticed to be less than in former years. Last winter was an exceedingly severe one for this section, and hence the scarcity of ticks.

During next season, among other efforts to determine the question as to whether there are other means of infection than ticks, I intend to select a farm which has been notoriously permanently infected and adopt every possible method to keep it

free from ticks, and then note the effect of introducing susceptible cattle.

As to the means to be used in destroying ticks I have made no practical experiments, but it is my intention to institute experiments with the beginning of the season.

Dr. Francis, veterinarian of the Texas Agricultural Experiment Station, publishes in Bulletin No. 24, of that institution, some very practical information in regard to the methods he follows to destroy ticks on cattle. He says: "A combination of ard and sulphur or lard and kerosene gives good results." The best results obtained by him followed the use of sheep dips. He used Cannon's, Hayward's, and Little's dips, two per cent. solution (in water). On ranges where a great number of animals are to be freed from ticks he devised an unique apparatus which he describes and illustrates in Bulletin No. 24. Where the number of cattle is limited the dips are applied with sponges, mops, brushes, or syringes.

I infer from reading the Bulletin that their object in destroying ticks is not to prevent Texas fever, but in order to rid the cattle of a pest, which the tick is considered to be. When we consider the general ignorance of every particular in regard to this fatal disease manifested by those directly interested, the heavy losses sustained by cattle-owners is not at all surprising. Very few in this section realize that murrain and Texas fever mean the same disease. In view of all the information sent out by the U. S. Agricultural Department one would think that the public should be well posted on the subject, but such is not the case. Fully ninety-five per cent. of the valuable literature published by the government is wasted because it does not reach the persons who would make proper use of it, or if it does reach a certain percentage of them, it is in a shape that is incomprehensible to them, consequently is not read or studied.

There can be no doubt that if the government would issue a treatise on the subject in popular language, free from technicalities, giving the common name of the disease in each locality, and embracing the nature, characteristics, causes, so far as known, and the preventive measures, including the best means known of destroying ticks, more practical benefit would result than has followed the valuable work of the Bureau on this disease up to date. Such a publication should not be intrusted to Congressmen for distribution, but should be sent to post-

masters and country merchants throughout the regions directly concerned for distribution to cattle-owners.

During the coming year Prof. Niles and myself will be your committee on this disease, and, as our work is now outlined and better understood, we hope to be able to present a report of some value to the members of the Association.

HEALTH OF THE PIG.¹

BY D. MCINTOSH, V.S.,
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EDMOND PARK says: "If we had a perfect knowledge of the laws of life and could apply this knowledge in a perfect system of hygienic rules, disease would be impossible. Hygiene is the art of preserving health. It aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote." So beautiful and comprehensive is this definition it ought to be often repeated.

In dealing with this subject of health there are several things to be taken into consideration; this I will do as briefly as possible. First, we should follow nature's steps as closely as practicable, and should consider the condition of the pig in its natural haunts and deprive it of as few of them as possible. The pig is an omnivorous animal and eats all. It is destined by nature to uproot plants and grope among the dropped acorns and other fruits of the forest; and Youatt says: "In point of fact the snout of the pig is its spade with which it roots in the ground for roots and earth worms."

By putting an iron ring through the cartilage of its nose we thus deprive it of the power of searching for and analyzing its food, and by doing so we prevent it from getting substances which would be very beneficial for the maintenance of its health. To be profitable it is necessary to feed pigs more food than they could obtain in a natural state in order to bring them to maturity as fast as possible, and this is done at the expense of the animal's health; seeing that this has to be done we ought to consider what kind of food is best to obtain this result and at

¹ Read before the Illinois Swine-breeders' Association.

the same time keep the animal in a vigorous condition. Yeo says that if an animal is in perfect health the pure alkaline blood circulating through the tissues of the body prevents the germs of disease from finding a suitable place to develop. Let us look for a short time at the physiological actions of some of the most important organs of the animal body, as we will then be better able to understand some of the causes of ill health.

The stomach of the pig in its natural state is small and the intestines have great assimilating power. In this capacity the pig is ahead of all other animals, which accounts for its taking on fat so rapidly. By giving large quantities of food the stomach becomes distended and in some cases weakened so that it cannot digest the food properly, and it passes out of the stomach in this condition into the intestines, where it acts as a foreign body, setting up disturbance, deranging the mucous membrane, leaving it in a condition favorable for the development of microbes and other germs of disease; the undigested portion will pass out as feces. The pig should be fed as much during the fattening period as it can digest, and nothing more. This can be easily ascertained by examining the feces. The kidneys secrete the urine and other effete material, the result of the disintegration of the nitrogenous substances in the body; they require to be in a healthy, active state to perform this function, or blood-poisoning is the result; if not blood-poisoning, sufficient disturbance is caused to leave the animal liable to disease. The heart should be strong and vigorous in order to be able to propel the blood to all the tissues of the body to nourish them. The lungs should be strong, with large capacity to draw in oxygen and give off carbon dioxide and other effete materials, in this way keeping the blood pure. The nerves which govern all parts of the body should also be strong and active. This is largely accomplished by the kind of food we feed the animal on.

What is the animal body composed of? The chemical constituents of the animal body may be thus classified: First, albuminous substances characterized by the presence of nitrogen, carbon, hydrogen, and oxygen. Second, carbohydrates and hydrocarbons, characterized by the absence of nitrogen and the presence of carbon, hydrogen, and oxygen. Third, salts and water. In order to keep all the tissues of the body in healthy action and vigor it is necessary to see that the animal gets a

food which contains all these elements, or to give a mixed diet which will combine to furnish the materials necessary. Food should be composed of nitrogenous portions called albuminates or flesh-makers, hydrocarbons or fat-makers, carbohydrates, which are starch and sugar bodies, also fat-producers. These are all necessary for the healthy development of the animal tissues. Let us see which of the various grains contain the substances mentioned.

	Corn.	Oats.	Peas.	Red Clover.
Water	13.9	13.5	13.3	16.7
Albumin	10.1	11.9	22.4	13.4
Fats	4.8	5.8	2.5	3.2
Carbohydrates and non-nitrogenous extractive matters	66.8	57.5	52.3	29.9
Cellulose	2.8	8.1	9.2	35.8
Ash	1.7	2.6	2.5	2.6

These figures vary considerably according to the condition of the ground on which the grains grow, whether it is rich or poor, cultivation, etc. The above table shows that oats and peas are more evenly balanced than corn. They are therefore the grains best suited for the growth and development of the tissues of the body, and also to keep them in a healthy state. When food substances are deficient in the albuminates and salts the system is generally lowered in tone, and there is a tendency to the formation of "exudations," composed of imperfectly developed cells, which in the great majority of cases, from the very beginning, are incapable of development into perfect entities, having only one potential quality, that of dying, and in so doing cause various derangements in the body, especially in the respiratory organs, producing tuberculosis and affections of the glands of the intestines. Oats also contain a nitrogenous alkaloid called avenin, which possesses the property of acting as a nerve stimulant. It is on this account that horses largely fed on oats are so spirited. The salts or ash that these substances contain are all needed in the animal body in order that they will grow, and also support the system in older animals. Oats is the grain par excellence for the horse and peas for the pig. Corn, alone, has not sufficient albuminates and salts and has too much starchy substance, which is converted into fat and is therefore a grain which is not fit food for a young grow-

ing animal. It is necessary to feed other materials which contain albuminates to supply the deficiency of this material in the corn. And I am satisfied that the prevalence of cholera among pigs in the corn-growing States is in great part due to the feeding of too much corn. In Canada, where the pig is mostly fed on peas and oats and the refuse of wheat and rye, cholera is unknown. It is true there have been a few cases of cholera in Canada, but it has been mostly on the borders where it was supposed to have been brought over the river, and some years ago at Montreal, supposed to have been caused by feeding on distillery slops. Messrs. Lawes and Gilbert made a number of experiments on feeding in England, and found that pigs fed exclusively on corn would frequently swell in the neck. They did not wish to discontinue the experiment, and therefore resolved to try the effect of putting some mineral substance in a trough within reach of the pigs. They made a mixture of twenty pounds of sifted coal ashes, four pounds of common salt, and one pound of superphosphate of lime. A trough containing this mineral mixture was put into the pen at the commencement of the second fortnight, and the pigs began to lick it with evident relish. From this time the swellings or tumors, as well as the difficulty in breathing, began to diminish rapidly, and at the end of a month had entirely disappeared. The three pigs consumed of the mineral mixture described above nine pounds during the first fortnight, six pounds during the second, and nine pounds during the third. This, although a single experiment, shows, I think, that these animals may be fed on corn with impunity, providing that a compound of this or some other be put within their reach. I would suggest the following:

First, that we should avoid inbreeding as much as possible, as there is no doubt that it lessens the vitality of the offspring, leaving them in a condition liable to disease.

Second, that we select large sows, well developed, and at least one year old.

Third, that the boar should be of a smaller breed, compact, and of a vigorous constitution. This combination will insure strong, healthy offspring.

Fourth, that the sow and the boar should be fed on ground oats and bran mixed, sufficient to keep them growing, but not too fat, as when they are too fat their vitality is lessened. They should have a small field to run in, separate, at some distance

from each other. They should not have rings in their noses, but be allowed to dig at pleasure, as they will find material in the ground useful for their health. If they should show signs of getting fat, cut down their feed ; on the other hand, if they are losing flesh, feed a little more. They should have a shelter from the sun in summer and a comfortable place to sleep in at night in winter. They should have green clover in summer and dry clover-hay in winter. Give plenty of fresh water and a little salt mixed with their food. Pigs treated in this way will seldom have any ailments.

Fifth, that having strong, healthy, young pigs to begin with, it is necessary to feed them on materials that will keep up vigor and at the same time produce rapid growth. This can be accomplished by feeding them on ground oats or peas mixed with bran, and turning into a clover field, if possible ; if not, clover should be cut and brought to them. Milk of all kinds is useful. They should have a field to roam in, and after they are old enough the boars should be separated from the sows. The above food contains all the elements necessary for the growth and development of the pig. The bran, shell of the oats, and the clover contain a large percentage of cellulose, and although the pig cannot digest more than half of this material, yet it is very useful, as it contains just what is needed to assist in forming the tissues of the body. Pigs fed as above will have all parts of their bodies well nourished and in a state of vigor to perform all the functions required of them to fortify their body against at least ordinary diseases.

Sixth, that too many pigs should not be kept together, as they are apt to sleep in the same place, and, although it may be well ventilated or even out in the open air, they are apt to breathe some of the foul air emanating from their bodies. No class of animals thrive well where numbers are kept together. When the time arrives to feed the hogs for market you will have a splendid foundation to begin feeding on : strong digestive and assimilating organs which will be able to digest and assimilate large quantities of food. Corn can now be used, with a little ground oats and bran, with advantage and profit. I think, if this method were carried out, in a few years hog cholera would be a thing of the past. Gentlemen, try it.

THE THEORIES OF IMMUNITY.¹

By E. P. NILES, D.V.M.,
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No branch of the science of biology is receiving at the present time more deserved attention than immunity. It may also be said that less is known about this part of the science than of any other.

It is not my intention to offer anything new on the subject. If I even succeed in placing before you in an intelligent manner the views of our eminent bacteriologists I shall feel that my feeble effort has not been in vain. In the beginning of this paper I shall not attempt to offer a definition for the term immunity, but shall confine my remarks to a discussion of the theories of immunity and a few of the experiments brought to bear in support of the same.

Immunity may be discussed under two heads, viz., natural and acquired. It is a well-known fact that certain bacterial diseases affect a certain class of animals, while others are exempt from the action of these germs. Glanders is essentially a disease of the equine species, while the bovine species show perfect immunity to the disease. The dog and rat are decidedly immune to anthrax, while it is readily communicated to the equine, bovine, and human races by inoculation. Even age in animals of the same species seems to influence the degree of immunity. In the human family scarlet fever and whooping-cough are considered children's diseases, since they are much more prevalent in them than in adults. Diphtheria is also more frequently met with in children. At the same time, however, I have heard physicians assert that a young baby will not contract the disease. If this be true it can only be explained by the supposed germicidal action of the thymus gland, which rapidly disappears after birth, and possibly some influence of the mother's milk. In the lower animals anthrax is known to be much more fatal to the young, while in Texas cattle fever the old seem to be more susceptible.

It is said that the blood of naturally immune animals when

¹ A paper read before the Virginia State Veterinary Medical Association, Richmond, Va., January 2, 1896.

injected into susceptible animals will counteract the effect of certain disease-producing germs. For instance, a small quantity of the blood of a frog when injected into the circulation of a mouse will render that animal immune to anthrax, but has no such action in reference to other diseases. It would seem, then, that an animal or person may be immune to certain diseases and that the blood of such an individual has, to a certain extent, the property of producing immunity in other subjects.

Just what this immunitive substance is remains to be discovered. Many theories have been advanced, but they all lack positive proof.

Before discussing these theories in detail it must be remembered that in susceptible animals pathogenic germs, when introduced into the system, multiply with great rapidity, while in non-susceptible animals no such multiplication takes place.

In naturally immune animals, then, there must be some substance which prevents this development of the germ, or some condition of the system unfavorable to its growth.

In some the body temperature seems to be the unfavorable element, since certain bacteria only grow in very narrow limits of temperature. The common fowl is generally supposed to be immune to anthrax under normal conditions, but Pasteur has shown that they may be rendered susceptible by being refrigerated after inoculation, by immersing their bodies in cold water. On the other hand, Koch has pointed out that sparrows, whose normal temperature is as high as that of the fowl, contract the disease without refrigeration. From the above we are led to the conclusion that the high temperature of the fowl is not the only factor brought to bear in rendering it immune to anthrax. Gibier has shown that the anthrax bacillus will multiply in both the frog and fish if kept in water at a temperature of 35° C.; both being immune under ordinary circumstances. The bacillus of anthrax, however, grows under quite a wide range of temperature, and it is more than probable that some agent other than the body temperature of the subjects mentioned has something to do in causing this natural immunity. There is, however, certain pathogenic bacteria to which the above theory may hold good, *e. g.*, the tubercle bacilli, which require a temperature of 37° C. or more for their multiplication.

The reaction of the body fluids, according to the experiments of Behring, seems to have a decided influence in producing the decided immunity of the white rat to anthrax. The blood of

these animals is decidedly alkaline, to which is attributed the remarkable resistance of these animals to virulent cultures of the bacillus of anthrax. When so fed, however, as to render their blood acid they readily yield to the disease. It has also been shown by Behring, Nuttall, and others that recently-drawn blood of naturally immune animals has a decided germicidal effect on certain pathogenic bacteria, while upon others it has no such effect. Buchner has demonstrated that this power belongs to the fluid part of the blood and not to the cellular elements. This power is said to be destroyed by heat, and lost when the blood has been kept for a considerable length of time, but is not affected by cold. It is also claimed that this power of the blood is very decided in its action, but limited to a given number of bacteria, and that when this number is exceeded rapid development of the germ takes place in the blood-serum, but becomes very much attenuated.

Hankins has isolated from the spleen and blood of rats a substance which has decided germicidal properties, and which he terms *globulin*. While keeping in view the alkaline theory, he attributes the power of rats' blood to destroy the anthrax bacillus largely to this globulin.

Kitasato and others have published interesting results of their experiments, in which they made a bouillon from the thymus gland of a calf. It was found that the tetanus bacillus when cultivated in this fluid did not form spores and had but little virulence. Small animals inoculated with small quantities of these cultures were rendered immune. The blood-serum of such animals was also found to be capable of producing immunity in other animals. The same was also found to be true with a few other pathogenic germs. This experiment led to the present antitoxin treatment for diphtheria. To this gland may be attributed the certain degree of immunity enjoyed by certain young.

It is worthy of note that by far the majority of pathogenic bacteria are only capable of producing disease by the products, toxalbumins, of their multiplication within the system, or by the absorption of these products through the tissues, as in diphtheria and tetanus, and that the immunitive substance in the blood or tissue must have the power of neutralizing these toxalbumins. In support of this theory Arloing has been able to produce symptomatic anthrax in naturally immune animals by adding certain chemicals to the cultures with which they

were inoculated; thus seeming to indicate that the immunitive substance was destroyed by the chemical.

The subject of *acquired immunity* deserves our special attention, since the whole army of bacteriologists seemed to be centred upon that one point for distinction, and, while as yet but little is known on the subject, marvellous revelations may be looked for in the comparatively near future.

It is a well-established fact that a single attack of such diseases as smallpox, scarlet fever, and yellow fever generally confer immunity from subsequent attacks. It is interesting to note, too, that this immunity is a duration of a lifetime. In the above-mentioned diseases the system becomes affected in general, although this is not necessary to produce perfect immunity, for we have similar results from such local affections as whooping-cough and mumps. In the first instance the immunitive substance is developed within the system, while in the second it must be absorbed from the infected area. It is also worthy of note that an attack of a certain infectious disease does not render the patient immune from other infectious diseases.

A number of theories have been advanced as to the nature of this acquired immunity, but none have been adopted as clear and definite. The severity of an attack of an infectious disease does not affect the degree of immunity produced; *e. g.*, a mild attack of smallpox or scarlet fever will render the patient as thoroughly immune as a severe attack. Indeed, a severe attack of the disease does not always render the patient absolutely immune, for cases are on record in which certain individuals have been known to suffer a second attack.

For a time it was the belief of Pasteur that in an attack of an infectious disease the pathogenic bacteria in its multiplication in the body of a susceptible animal exhausted some substance necessary for its growth, and that this substance was never reproduced. In support of this theory an artificial culture media may be compared to the body. When bacteria have grown in a given quantity of culture media for a certain time, it is observed that further development ceases, which may be due to one or both of two factors, *viz.*, exhaustion of nutrition and excessive amount of toxalbumins.

We are hardly justified in supposing that the nutrition of the body has been used up by the bacteria, and would, therefore, have to conclude that the toxalbumins present in the system

prevent any further development of the germ. At the same time it is hardly reasonable to suppose that these substances would not be excreted from the body in course of time. It would be just as unreasonable to suppose that a normal substance in the body which had been exhausted by the bacteria would not again be reproduced.

It will be seen, then, that if immunity is due to either of the above theories alone, it could only be temporary. It has been argued by some, especially Metschnikoff, that immunity is largely, if not entirely, due to the action of the white blood-corpuscles which Metschnikoff terms phagocytes. When the system becomes invaded with bacteria it is known that many of the germs are picked up and destroyed by these corpuscles. It is really a battle between the leucocytes and the bacteria, in which many on each side are slain. If examined under the microscope leucocytes will be seen to contain various numbers of bacteria in their interior. In some it would appear that the leucocytes were capable of digesting the bacteria and assimilating them as nutrition, while in others the opposite suggests itself, in view of which the question naturally arises: Do the bacteria flock to the leucocytes because they find in them a suitable culture media, or do the leucocytes make the attack?

Those who support the theory of phagocytosis attribute immunity to the power of the leucocytes to attack and destroy the germ. There is no doubt that they have some such power, but I do not believe that we can attribute immunity to this one factor alone.

It is well known that the system may acquire a certain tolerance to certain drugs, such as opium, tobacco, and arsenic. When the use of these is continued for some time, doses sufficiently large to destroy the life of an ordinary individual may be taken with impunity. If the system will acquire a tolerance to the action of such drugs, it is reasonable to suppose that it may also acquire a tolerance to the action of bacteria or their toxalbumins.

Until more is known on the subject we shall have to be content with the theory that immunity is due to three factors, viz.: the action of leucocytes upon bacteria when introduced into the body; acquired tolerance of the cellular elements of the body, and the formation in the system of antitoxins which oppose further development of the pathogenic micro-organism.

VETERINARY MEAT-INSPECTION.¹

BY G. ED. LEACH, M.D.C.,
MILWAUKEE, WISCONSIN.

THE subject of veterinary meat-inspection by the State and the necessity for it is one of the great questions that to-day interests alike the breeder, consumer, veterinarian and M. D., and also one which should be presented with the determination to give to the people the assurance of healthful food of this kind, and at the same time they should manifest the most intense interest in and exert every effort to prevent the public from being imposed upon by unscrupulous dealers, both wholesale and retail.

We have in the State of Wisconsin, according to the last census, nearly two millions of people that are consumers of meats in some form or other, from one to three times a day, and the majority have no safeguard thrown around them that what they eat is free from disease. True it is that some are eating inspected meats, but they are in a very small minority compared with those who are obliged to take whatever the dealer nearest their homes has a mind to deal out to them, and a great many are content to have what is considered refuse from the stockyards and wholesale slaughtering-houses. I have seen people of the poorer class and of foreign birth carrying from our stockyards carcasses of animals that had died *in transitu* (and who knows from what cause?), or of premature birth, for the purpose of using them for food. These people are entirely ignorant of the fact that the worst forms of disease are found in such animals.

Many inconsiderate and unscrupulous butchers stand ready to buy anything, either at the yards or in the country, that may be sick and unthrifty, or pregnant in its advanced stage, and, as long as there is no one whose business it is to prevent them from doing so, place it on the market. To the general public they look as well as any, while in these carcasses lurk diseases that may destroy whole families. It is no uncommon thing to pick up the paper and read some startling article of lives lost, and the public simply say, "That was terrible," and go right

¹ Read before the Wisconsin State Veterinary Medical Association, February 5, 1896.

along allowing the same things to continue without entering an objection.

There are to-day in the city of Milwaukee eight wholesalers and about sixty-five jobbers selling meat to retailers, and some retailing themselves. Of these five have government inspection, namely: Swift, Armour, Cudahy, Layton, and Plankinton. The remainder have practically no inspection except that furnished by the Health Department, and generally these have been persons with a pull, who cared more for the welfare of a few friends and the party than the welfare of the public; but, thanks to the civil-service system, this will now be stopped. Even were these inspectors the most capable, the force of help is inadequate to handle with any degree of satisfaction the work forced upon them.

The better class of the people demand and receive the inspected meat by the payment of a higher price for it; but these are only a few compared with the vast number of people who have no protection whatever save that which is furnished by the Health Department police, with no method or rule as to what shall be condemned and what allowed to pass and be consumed. Therefore, the inspectors or police are left to rely wholly upon their own judgment, and in a great many instances they have a price fixed by which their judgment fails to detect anything wrong. The methods employed are wholly inadequate to meet the necessity, and we are worse off to-day than the Jews, or children of Israel, who from their earliest history have demanded and still continue to do so, as a divine law handed down to them from the prophets, that all meats designed for food or sacrifice should be without blemish or disease or pregnancy (four weeks before and two weeks after), and all meats must be examined by a *schächter* and pronounced by him clean (*kosher*). Not even the blood can be left in the carcass, and the veins and arteries must be inflated to drain them, as the blood is considered unclean and will pollute them.

Secretary Morton admits that the present system of Government inspection is doing an injustice to the people of the country. You will pardon me for quoting from an article on this subject from a Washington correspondent, dated Nov. 5, 1895: "Secretary Morton will complete his annual report next week. The Secretary will take up the subject of Government inspection of meats, and will point out some of the defects in it as it now exists. The fact that the system fails to protect Amer-

ican consumers while it guards the health of the foreign purchaser of our beef has often been pointed out. The law permits the Federal authorities to condemn, but not to destroy, and this stands in the way of an effectual interference on the part of the Government officials to prevent the consumption of diseased meats in the country. Mr. Morton admits the imperfection of the law and says it is due to our system of government, which leaves such matters largely to the State. He says, however, that there is a remedy for the defect, which is to be found in appealing to the owners of diseased stock or in co-operation with the State Government, and he urges that steps be taken looking to the extension of the National Government's prerogative in this direction." (This refers to the custom of taking animals condemned as diseased to some other place and having them killed.)

Gentlemen, it is my opinion that a uniform plan of meat-inspection, affecting each State as well as the Government, and benefiting the home consumer as well as the foreign, will surely bring beneficial results if carried out. But will it be done?

The National Live-stock Board in session at Chicago, in November, condemned the present system as discriminating against the general good of the people. (See circular from Bureau of Animal Industry, with the last session, date of December 13, 1895.) If this is carried out by the Government inspector then there still remains the obstruction which stands in the way of the inspector. He has no power to destroy, and the owner may take his diseased animals to some local butcher and dispose of the same, if he sees fit to do so. And do you think, gentlemen, that the owners of such stock will have said stock destroyed and thrown in the tanks of their own free will or for the benefit of the public health? Never, until the people rise up in their indignation and demand this to be done through State legislation.

You can see readily that the result of limiting the inspection of meats to that exported out of the State is that the inhabitants are to a great extent obliged to eat the meat that is not good enough for outsiders. The tendency to discriminate in the matter of meat-inspection cannot fail to be harmful to the home consumer. It certainly seems that it is of equally as much importance to have the interests of the consumer of meats at home as carefully guarded as those abroad, and doubtless

the best and only method of bringing this about is to secure a uniform standard of inspection.

There is but one way to bring about this uniformity, and that is by a concerted action on the part of the different States and the Government. The Federal law gives the inspectors the right to act in conjunction with the State authorities on all cases *in transitu*, where the State expresses a desire to do so. But what is generally their attitude in such cases? They usually manifest a disposition to rush them off their hands as quickly as possible, with the excuse that they cannot be bothered with such cases, and that they make too much trouble for those in charge of these affairs, for the State and Government inspector is ignored.

There is a section in the Federal law (6-41) which provides for the unloading and feeding of all stock *in transitu*, and a fine of from \$100 to \$500 for failure; and in case of sickness shall not be reshipped; but with a few exceptions, how many of these unloading points are guarded by either Government or State authorities? In some instances the Health Department take these cases in their hands, and, not having the power to condemn, they are generally censured for making too much trouble and expense for the State. The State code has ample power provided in it for the foundation on which could be built a great work, through which the public might receive some protection if it were enforced, but herein lies the trouble. In looking over the code I find the following acts now in force:

Chapter 187, Sec. 4599, year '89, entitled an act to regulate the selling of unwholesome provisions. Any person who shall knowingly sell any kind of diseased, corrupted, or unwholesome provision, whether for meat or drink, without making the same fully known to the buyer, shall be punished by imprisonment not to exceed six months or by fine not exceeding \$100.

Sec. 4605, Chapters 187-189. An act to control diseased animals from running at large. Any person who shall suffer to run at large or shall keep in any place where others animals can have access to or become inflicted by them, any horse, mare, ass, ox, bull, cow, sheep, or other domestic animals owned by him, or in the care or possession, or known by him to be affected by glanders, farcy, or other contagious or infectious disease, or who shall have in his possession in this State any diseased animals, shall be punished by imprisonment in the county jail not more than one year or by fine not to exceed \$200.

Sec. 4608, Chapter 187-89. An act regulating the orders of boards of health. Any person who shall wilfully violate any law relating to the public health, or any order or regulation of any board of health, lawfully made and duly published, shall be punished by imprisonment in the county jail not more than three months or by a fine not to exceed \$100. Upon complaint made in writing under oath before any magistrate or justice of the peace, charging the commission of any offense against the provisions of any act in his county, it shall be the duty of the district attorney to prosecute the offender.

The general law of the State under Chapter 1492 A has nearly the same construction of the law to govern the State Veterinarian, yet it gives more power to the executor.

I have fully shown by these references that there is now a sufficient legal foundation for the upbuilding of a great work in this line, which, although not adequate, can by being amended from time to time be made to conform to the necessary requirements of this branch of work; but the vital question which has been overlooked is, Who will enforce and carry out the requirements for which there has been no provision? It is left for everybody to look after, and what is everybody's business is no one's business.

It has been conceded by the law that the foundation of the complaints is disease, and who is there to-day able to cope with this stupendous question but the educated and qualified veterinarians? The day has passed when the usefulness of the veterinarian is confined to a dirty, greasy castrating outfit or a few bottles of aconite, belladonna, spirits of nitre, etc. He must be able to cope with these questions of vital importance with the ablest members of the medical profession. And this means a great deal of work in the matter of investigation and research, and this fact becomes more apparent every day, coupled with the necessity of a more concerted action on the part of every member of the profession in order to bring the profession up to the high standard it should possess. Some action should be taken whereby the people shall be profited and the credit placed where it justly belongs.

The first thing that should be considered in this connection to bring about the results to which we should attain is the formation or creation of a board of live-stock commissioners composed of five persons, namely: Two stock-raisers, who shall have a thorough knowledge of feeding, breeding, and

sanitary conditions; two veterinarians, who are graduates from reputable colleges and of superior learning, personal skill, and of good moral character; and the fifth a member of the State Board of Health. This shall constitute the Board, who shall, with the State Veterinarians, investigate all cases reported to them of a contagious or infectious nature, and they shall have the power to inspect all herds and, in case of disease, to condemn. There should be a qualified veterinarian on the State Board of Health and on every city board, and in such counties as have no city board of health there should be a county veterinarian who should work with the county board for the purpose of investigating all cases of contagious and infectious diseases reported in the county, and should report such cases to the board of live-stock commissioners. With this plan of work throughout the different States, and they working conjointly with the Bureau of Animal Industry, it would be possible to eradicate all cases of a contagious or infectious nature that might exist, expeditiously and systematically.

Finally, if you guard the food of the people you guard the health, for whatever be the disease, promoting surroundings, a healthy body nourished by healthy food can better withstand the encroachments of disease than the body whose vitality is impoverished by unhealthful food.

PURPURA HEMORRHAGICA IN THE BOVINE SPECIES, WITH REPORT OF A CASE.¹

BY G. T. NETHERTON, M.D.C.,
GALLATIN, MO.

PURPURA hemorrhagica is a disease frequently met with in our practice, and is so well understood by the profession that I deem it unnecessary to enter into a minute pathological description in this brief paper; suffice it to say, that it is a disease due to a deterioration of the blood, with impaired function of the vasomotor nerves governing the smaller bloodvessels and capillaries, the red blood-corpuscles having a contracted appearance, while the white corpuscles seem to increase in number; also the aqueous portion of the blood is increased and the fibrinous portion is decreased, thus lessening the coagulability of the

¹ Paper read before the Missouri Valley Veterinary Association, December 13, 1895.

blood. The general appearance of the blood is similar to fresh blood having been treated with ammonia. Purpura, as a general rule, is said to be a sequel to some other debilitating disease; but our experience has taught us that there are many exceptions to this rule, as we have been called to treat cases in fairly good flesh, running on pasture, with no history of any previous trouble.

All of our text-books, together with all reliable veterinary literature that I have had the privilege of reading, confine the disease of purpura hemorrhagica to the equidæ or soliped, and my own practical experience confirms the position of our text-books with one exception, viz. :

August 19, 1895, I was called to see a Jersey cow, in full flow of milk; calf three and a half months old; cow in good flesh and on good pasture, with drinking water supplied from a well, with no history of previous sickness.

Semiology. Lacteal secretions largely suppressed; large, patchy, circumscribed swelling on inside of thighs, as well as on back and loins; head and ears swollen; ears hanging like heavy pads to the sides of the head; the eyelids swollen shut, with œdema of the conjunctiva; the udder and teats swollen and œdematous, giving it more the appearance of some wild animal than that of a neat Jersey cow, which she was when in her normal condition. Pulse and temperature slightly accelerated. The owner being an intelligent gentleman, the editor of a county newspaper, asked for my diagnosis. My reply was that if I had these symptoms in a horse I would call it purpura hemorrhagica, but as I have never read nor witnessed a case like this in the cow, I should not name it, but would administer a saline cathartic and see her again the next day, providing she lived that long.

Upon my visit next day I found the characteristic exudation of bloody serum standing out profusely on the diseased surface. I then remarked to the owner that we had a typical case of purpura hemorrhagica in the bovine species. There developed considerable exfoliation about the head and eyes and upon the udder and teats. The disease yielded nicely to the ordinary treatment for purpura in the soliped, and the cow made a good recovery.

ABSTRACTS FROM FOREIGN JOURNALS.

AMERICAN HORSES FOR THE FRENCH ARMY. For the last two years the French Government has been purchasing many cavalry and artillery horses in this country, the principal market being at Indianapolis, Ind., which was selected, after visiting other horse centres, as being the best market for military animals.

The horses are purchased by a commission of army officers and an officer of the veterinary staff, and a horse is rejected if objected to by any member, but the veterinary officer's opinion is decisive on soundness, gait, and conformation.

The average price paid was \$150, and the horses ranged from 15 to 16 hands and from 900 to 1150 pounds, the lighter horses for cavalry and the heavier ones for artillery. Stallions, geldings, and mares were purchased, preference being shown for mares, owing to their longevity, tractability, and other good and sufficient reasons, especially since they can be used as broodmares when condemned as being useless for military work.

The veterinary examination was very strict and thorough, and ten horses were rejected to every one purchased. Horses with either a long or sway back, or short pasterns, or vertical shoulders, were rejected at once, and all horses had to have a chest circumference at the eighth rib of 69 inches or over. Horses having large brand marks or excoriated lips, mouth, and ears were rejected, owing to the fact that they do not train well for the purposes required. In making a purchase the commission decided on the price to be paid, it was offered and, if accepted, the horse was branded with the government mark. No wrangling over the price was indulged in with the dealers.

This year the commission purchased 200 horses, shipping to France *via* Baltimore, their destination being the cavalry school at Saumur, where they are trained previous to being sent to their regiments. As to the gait, a regular walk, trot, and gallop were insisted upon; no mixed gaits permitted. As to color, the horses were required to have a regular fixed color. No gray or piebald horses are purchased, nor those of a bleached color, the so-called "washy" horses.—*Veterinarian* M. J. TREACY, *8th Cavalry*, in "*Cavalry Journal*."

STRANGLES IN SOUTH AFRICA. From an article by Dr. Sander on "South African Epidemics" in the January *Archiv für wissenschaftliche und praktische Thierheilkunde*.

In regard to the name, it is to be noticed that this disease is often called the "new sickness" in South Africa. However, in Cape Colony the same name is often applied to what we call glanders, so that ambiguity often arises in articles dealing with diseases in South Africa.

The time for the appearance of the disease (strangles) is in accordance with what I have observed myself and heard from the settlers, the summer months, which naturally correspond to our winter months on the calendar. For the district under consideration (Windhoek), as well as for the greater part of South Africa, the summer and the rainy season are identical. For this reason the settlers always designate the rainy season as the time for the appearance of the disease. However, this was only true of one of the two cases which I had the opportunity to observe. The other case occurred in January, 1894, long before the rainy season, which was very late that year, had set in.

The disease is not contagious to a degree worthy of mention, for both the horses under my observation stood together with several others in the same stall, respectively kraal, and went together with these and others to the same pasture without communicating the disease to any of the others. This argues against a high degree of infectiousness. However, that the disease is contagious to a small degree is not to be denied, because both horses were taken sick at the same place and in the same pasture, while at other places in the district the disease, as far as I know, did not appear in 1894. The second horse was taken sick at the end of March or the beginning of April, after the disease in the first had almost run its course.

The symptoms in both cases consisted of swellings in the region of the cheeks (jowls), corresponding to the position of the antrum Highmori. I found here a hard, semi-spherical swelling about the size of a goose-egg in which fluctuation was not perceptible. Examination from the cavity of the mouth showed that the swelling was not confined to the skin, as the impossibility to move it aside on the parts underlying had already made probable, but that it had spread to the underlying structures. On account of the great hardness of the tumor and my inability to separate it from the bone or push it aside

upon the same, I received the impression that I might have to deal here with a catarrhal condition of the Highmore cavity, together with obstruction of the channels leading to the nose. A considerable degree of catarrh in the mucous membrane of the nostrils and of the (connecting skin) of the eyelids seemed to add support to this view. In spite of this, however, I believe that it was merely a hard infiltration of the soft parts.

In the further course of the disease pus was formed and broke through ; in the first case, on the outside ; in the second, on the inside into the cavity of the mouth. The eruption of pus on the inside is said always to take place into the cavity of the mouth, and not, for example, into the cavities of the nose. At least such is the information that I have received. Besides, the tumor, in other cases which have shown in other respects the same general symptoms, was found on the under jawbone, corresponding to the catarrh in the mucous membrane of the respiratory channels. A disturbance of the general condition was noticeable in both cases, which consisted in inertness, ravenous appetite, languid look out of the eye, and in moderate coughing.

Sickness set in pretty suddenly, then took a chronic course and disappeared after several weeks. As soon as the pus had broken out the general symptoms disappeared, and the horses were again put to work.

The treatment consists in an artificial opening of the swelling if it does not reach an eruption in the natural course. If the pus is not gotten rid of, or it is impossible to open the tumor because it lies too deeply imbedded, the animals are said to die.

MALIGNANT ŒDEMA (from the same article). I saw one case in a horse in Windhoek in May, which I diagnosed as malignant œdema on the ground of general symptoms, without bacteriological examination. The horse, a young and restless animal from 2 to 2½ years old, was left hobbled in the pasture during the night, as is the custom in the country. The hobbling was done in this case as usual, with a strap about as thick as one's finger. This strap is fastened in two loops around the middle ankle bones of the front legs, in the middle between the ankle and fetter-joint, and drawn together until the distance between the legs is about the length of one's hand. The horse can take only very small steps and usually prefers to spring forward with both forelegs together. The strap is made mostly of untanned leather, is hard and unyielding, and cuts

in easily. This had taken place in the case under consideration. The middle of the backside of the ankle on both forelegs was galled in spots of about 2 cm. in breadth and 5 cm. in length. On the near front foot the excoriation was considerably longer, and somewhat deeper. From this point up the whole foreleg as far as the shoulder-joint was swollen to double its natural size. It was also very hot and extremely sensitive to pressure. The horse was wretched, had no appetite, his ears and hoofs were hot, and he showed generally a high temperature. From the excoriation there was dropping a thin discolored filthy liquid filled with air-bubbles. The swelling had almost the consistency of dough. Emphysema could only be felt very close to the wound. The sickness had existed several hours when I saw the animal, *i. e.*, it had been noticed early in the morning and I did not arrive until 10 o'clock. The treatment consisted in long, deep incisions and bandaging with creolin, which was renewed twice daily. On the next day the swelling had already decreased very considerably, and during the two following days decreased so as to be confined to the immediate neighborhood of the excoriation wound, while the secretion had become quite natural. The incisions healed up without difficulty. I saw the animal several months later in the best of health. Excepting this one case, I have never heard or read of another. I was also unable to find out what the natives call this disease. In England it bears the name of malignant œdema. It seems to occur very seldom, perhaps on account of the dry and loose nature of the soil in South Africa and the small extent to which manure is put upon the land. At least a great deal supports the view that there is a connection between the amount of dampness and manure in the earth on the one side and the bacillus of malignant œdema on the other, for the bacillus is found most often in garden earth which has been heavily manured and constantly sprinkled.

MALARIA IN ANIMALS (from the same article). Malaria cannot be designated as an epizooty, since its presence depends to a very high degree on the neighborhood, and we are not at all certain whether the germs can be transported to neighborhoods which were originally free from it. I hold that the occurrence of genuine malaria in animals is still wholly unproven, but the English veterinary surgeons in Cape Colony designate a number of undoubtedly contagious diseases as malaria, and I must

here at least mention the names of these epidemics. To enter upon a minute description of these diseases is impossible, particularly as I am acquainted with none of them from personal observation. I shall here merely call attention to those points in the information accessible to me which stand in contradiction to what is known about the origin of human malaria, in the hope of directing the attention of readers more conversant with the subject to the points which are still awaiting a thorough examination.

In the first place, I mention biliary fever or malarial jaundice in the horse. According to Hutcheon (Report of the Department), it is enzoötic in certain districts and takes such a violent course that it only responds to treatment when taken within the first twenty-four hours. It is most prevalent on the east coast, from midsummer (January, February) until the beginning of winter (May). This last characteristic corresponds exactly to the observations in the case of human malaria. The fact, also, that the disease is most prevalent in the eastern districts along the coast agrees with the well-established observation that malaria in the human family is confined in South Africa almost entirely to the same district. On the other hand, the statement that a cure by medical treatment is only possible within the first twenty-four hours does not at all agree with experience in regard to the course of malaria in the human family.

As a second disease, I would mention redwater in cattle. This disease takes its name from the bloody condition of the urine which is always present during sickness. The liver and gall are said to show very marked symptoms of disease also. This epidemic occurs chiefly in the rainy season, when the cattle are driven from the highlands down into the plains. It never occurs when the cattle are removed from lowlands to the highlands. The disease is said to be spreading further and further, and, in spite of all the regulations which have been placed upon the cattle trade, it is finding its way among cattle from infected districts into the grass lands of Cape Colony. Many hundred thousand pounds are lost annually by the ravages of this disease. According to Hellier, animals which have been raised on farms infected with the disease seem to have acquired immunity against it by some process of natural inoculation, possibly in some cases before they were born, for cattle raised in the neighborhood remain perfectly free from it, while imported ani-

mals are pretty sure to fall sick and die in the course of a month. This single observation seems to argue pretty positively against identifying redwater with any form of malaria or bringing it in any way in connection with the same. In the case of man, malaria always produces an increased tendency to fall a prey to some new disease, particularly when the patient has not been long afflicted. Again, people who have grown up in districts subject to fever are just as liable to fall sick with malaria as new-comers. Only in the case of the former the milder and chronic forms of the disease are more frequent than the pernicious and the acute. Here, however, we find the statement that animals which have become full grown in the infected districts enjoy full immunity against the epidemic. This fact can be no more easily accounted for on the basis of a genuinely contagious disease than on the basis of malaria, and that redwater is a real infectious disease seems to follow from the circumstance that, in spite of all the restrictions put upon the cattle trade, the disease is spreading further and further. In the case of malaria this fact cannot be accounted for.

Hellier reports that the Boers give "dips" (probably molasses made from grape juice) internally as a means of prevention. Hutcheon is very skeptical as to the possibility of finding a real preventive, but hopes that a better method of treatment may be found. Borthwick claims to have obtained results with certain medicines, while Hellier knows no method of treatment with specifics upon which he can depend. There is evidently great disagreement and unclearness in the method to be pursued, and we are justified in drawing the conclusion that medicine and natural immunity have been effective only in isolated cases.

Borthwick reports another observation which can be interpreted in the sense that redwater has nothing to do with malaria. He tried to diagnose previous stages of the disease in an infected herd, and found that the animals had a high temperature several days before an ordinary observer noticed it.

He treated the herd with his remedy:

R.—Raw lin. ol.	. . . . .	1 quart bottle.
Acid carbol. pur.	. . . . .	60 drops.
Natr. subsulphuros.	. . . . .	1 ounce.
Cal. chloric.	. . . . .	1 ounce.

Given as a single dose, repeated the second day, which, as one can see, contains elements destructive to bacteria to a high degree, and lost out of thirty-two only two animals.

I have also been unable to make microscopical investigations in all these diseases which are regarded as forms of malaria by English veterinary surgeons. And yet no method of investigation is better adapted than this to determine the question whether we have to deal with a real animal malaria or not. The characteristic plasmodium of the blood-cells would then certainly be found. A certain degree of skill would be necessary for this investigation, because the important changes in the red and white blood-corpuscles in many infectious diseases might easily deceive an inexperienced man in regard to plasmodium.

COMPULSORY MEAT-INSPECTION AND CATTLE-INSURANCE IN SAXONY. The Saxon Board of Agriculture emphasizes its complete agreement with the decision of the Chamber of Commerce in recommending plans for the introduction of a general and compulsory inspection of meat in connection with cattle insurance by the State, the Board of Agriculture to assume the cost of administering the laws and to pay an additional sum annually into the general treasury, because these regulations are only regarded as a support to other regulations which the Board has adopted at former sessions.—*Thierärztl. Centralblatt*, December 1, 1895.

THE TREATMENT OF SHOULDER-BOILS OR COLD ABSCESS OF THE SHOULDER. Article by Theodore Schmidt, D. V. S., First Clinical Assistant in the Military Veterinary Institute in Vienna.

During the school year of 1893-94 four different methods of treating shoulder-boils in horses were tried, as follows:

1. Application of moist heat with the help of a sort of collar (made to go around the neck) made of horse-blankets; fomentations, massage, and exercise.
2. Application of strong plasters, according to Hertwig's prescription.
3. Splitting of the front wall where abscess was present and the application of the sharp instrument (spoon or curette) for the partial removal of the solid walls of the abscess, followed by application of Priessnitz's poultices.
4. Extirpation of the tumor and suture, according to Bayer's method.

Two horses were treated, respectively, according to the first

and second methods, six according to the third, and eleven according to the fourth.

The choice of treatment was made in the majority of cases according to the indications present as far as pedagogical considerations could be left out of account.

According to the fourth method of treatment eleven tumors were treated. Healing up took place in nine cases, as far as the drainage canal, by first intention. In two cases, however, only partly in the first manner, because in one case a part of the (button) threads had cut through, and in the second case part of them had been torn out by the horse with his teeth.

When the swelling peels off (scales off) it is only necessary, according to the statement of my chief, Dr. Bayer, to remove so much of the tumor as will leave the same cupped, so to speak. After preparing and separating the flaps (lips) of skin, the incision is to be made in a plane with the sterno-cleido-mastoideus,¹ and in following this direction out the front wall of the abscess will be reached in a great majority of cases. It will seldom be necessary to go deeper in order to open the abscess. A total extirpation of the tumor in the case of these kind of tumors, which are complicated by streptococci, and often extend beyond the jugular (furrow or channel), would be dangerous on account of the proximity of the great channel, and besides be a mistake, because a good-sized cavity, visible at a distance, would result therefrom, which would be of considerable importance for the position of the collar and harness. The solid connecting tissue on both the side-walls of the abscess-cavity, which are formed in consequence of the chronic process of inflammation, are absorbed in the course of a few weeks after the operation, when the cause is removed, so that then the contour over both points become the same.

Finally, I must mention a slight (very seldom of any extent) oedema appears on the front of the breast and toward the side-breast on the third or fourth day after the operation, but disappears again before the seventh or eighth day. The infiltration of the skin ceases in a few days after the removal of the threads, and the skin becomes again pliant and elastic.

In the case of a cold abscess of no long standing and not very large, if the swelling has only a moderately firm consistency and involves only the cellular tissue of the under skin, the first

¹ Part of mastoido-humeralis of. Chauveau, Fleming's translation.

method of treatment with moist heat will usually prove effective. A strong plaster can be applied here also, but the first method has this advantage over the second, that the condition of the swelling can be observed every day.

The application of a severe plaster or blister is good when one does not intend to visit the patient again for several days. But the adherence of the plaster to the semispherical swelling and the tearing off of large pieces of the same after exudation has set in is a great disadvantage.

If the diagnosis is an abscess involving the cellular tissue of the under skin, so that a large part of the swelling shows an inflammatory œdema, then the third method, with splitting of the abscess, is to be recommended.

In every kind of tumors (joint-boils), which consist of a very tough connective tissue, which has its seat in the subcuticle, or which rests on a hyperplasia of the tissues in the sterno-cleido-mastoideus, and is supported through the process of local supuration in the muscle, the method of Bayer, with peeling off of the swelling, and the suture has the preference.

While many complain of the unsatisfactory results of this method and question the value of the same, I must answer that conditions are the same as in the application of Lister's method, and it must be determined, in the first place, whether the trouble does not lie in the carrying out of the treatment.

Even in those cases where a breaking of the intra- and sub-muscular abscess into the subcutaneous cellular tissue has taken place and an abscess has been formed here, the peeling (scaling) off of the indurated masses, and the application of the suture is, according to Bayer, to be preferred to treatment as an open wound, because healing up follows much more quickly, and a great deal of trouble is spared incident to the treatment of open wounds.—*Thierärztl. Centralblatt*, December 1, 1895.

DEATH OF COUNT TAAFFE. On November 29, 1895, Count Taaffe died after long suffering, and in him a man has departed whose great knowledge and remarkable executive ability places him in the group of Austria's first statesmen. His personal amiability and kindness have placed a monument in the hearts of everyone who ever came in contact with him. The veterinary surgeons of Austria have Count Taaffe to thank as the reorganizer of the whole Austrian sanitary and veterinary system, so that the long epoch in which he was active as the head of the

Upper Sanitary Department in Austria forms a turning point in the history of Austrian veterinary science. May, therefore, all honor be given to his memory.—*Thierärst Centralblatt*, December 15, 1895.

PERSONAL.

Dr. W. M. L. Coplin, formerly of Philadelphia, addressed the Farmers' Convention at Humboldt, Tenn., on the subject, "Shall the Live-stock Interests of Tennessee have Sanitary Protection?"

Veterinarian Jno. S. Meyer is taking a course in the medical college at St. Louis, Mo.

Prof. Liautard will remain abroad until some time in March. It is sincerely hoped by all that the health of Mrs. Liautard will be fully restored by the trip and change. Prof. Liautard recently announced to his extensive clientage his retirement from active practice.

Dr. F. A. Wall, of Pittsburg, is confined to a hospital, nursing injuries received in a street-car collision.

The home of Dr. Jas. A. Waugh, of Allegheny, has recently been gladdened by the birth of a son.

President Pearson has appointed the following members as a local committee of arrangements for the annual meeting of the Pennsylvania State Veterinary Medical Association at Philadelphia, March 3, 1896: Chairman, Dr. Jno. R. Hart, Dr. W. Horace Hoskins, and Dr. F. S. Allen.

The many friends of Prof. Jas. L. Robertson will be glad to learn of his gradual restoration to health, and wish for him that it may be speedy and complete.

E. E. Vaughn, V.S., late of Stamford, N. Y., has taken Dr. W. T. J. McLaughlin's office at 309 Barron Street, Jersey City, N. J.

REPORTS OF CASES.

AN UNPLEASANT THOUGH INTERESTING EXPERIENCE.

BY JNO. E. BROWN, V.S.,
OSKALOOSA, IA.

MANY horses in this section of Iowa, during the past few months, have suffered with a disease somewhat similar to that described by Williams under the title of "Stomatitis Pustulosa Contagiosa." This is an exceedingly elaborate and generous name—sounds wonderfully scientific; but I shall take no exception, for, since my experience with the disease, I am prepared to indorse any sort of a "handle" that can be spiked on and made to stick.

The first case I saw was a standard-bred mare that had been sent out to pasture for a few weeks. On being notified that the mare was not doing well, the owner had her brought back to the city. By this time she could neither eat nor drink, and an empiric was called in to prescribe. After a critical(?) examination, he concluded that she must have an ulcerated tooth; but, not being able to find it, later diagnosed it "broken jaw," and said it was incurable.

At this stage of the play the owner telephoned to me that he had a mare with a broken jaw, and for me to bring such instruments and appliances as such a case required.

On arriving at his stable a most dejected and forlorn-looking specimen of the equine race was found. Like Mark Twain's donkey, she had to lean up against the side of the stall to think. Had taken no food or water for two or three days; was greatly emaciated and so weak that if made to move would almost fall down. Pulse weak and irregular, and the nervous system completely collapsed. Spasmodic twitching of the muscles of the whole body, but especially about the head and face. The involuntary action or jerking of the muscles of the masseteric region kept the teeth chattering together in a peculiar manner. The eyelids were almost closed, angles of the mouth drawn back, and the alæ of the nose distended. Owing to the muscular contraction, I could not get the mouth open. I tried to draw the

tongue out through the interdental space, but it was too much swollen ; was of a grayish color, with deep transverse furrows, and where pressure was brought to bear with my thumb and fingers in the attempt to draw it out, several small cracks opened up and blood oozed out. The mouth and the little saliva that dribbled away had an exceedingly offensive odor. There were no ulcers, blisters, or pustules outside of the mouth, but the Schneiderian membrane was much inflamed, and more or less of the secretions from the nose, which were scanty, adhered to the nasal openings.

I failed to find the "ulcerated tooth" or broken jaw. I could not compare the existing conditions with anything I had ever seen, except that of the epizootic aphtha, which was so prevalent among the cattle of this country some years ago. The appearance of the tongue, mouth, lips, and mucous membrane, the great debility following, with other symptoms, were almost identical in the average case, and I cannot help associating the two diseases very closely together, if they are not the same.

The case described was the worst one I saw ; the symptoms in the other cases being more or less modified. Neither did the disease appear as a contagion ; in fact, it was the exception to find more than one or two cases in the same lot of horses. Generally it was the grazing horses that were attacked, though stable-kept horses were not exempt.

The principal treatment has consisted of frequent and thorough irrigation of the throat and mouth with a solution of hyposulphite of soda, and meeting urgent symptoms with such agents as seemed to be indicated.

In the cases where deglutition was difficult, a rubber tube was passed up through the nostril and the irrigation effected with a fountain syringe, and when it became necessary to administer stimulants or medicines by way of the stomach, the tube was pushed still further back and into the œsophagus. This line of treatment was most efficacious in every instance.

Particularly interesting to me, however, was my own individual case. On December 7th a man came to the hospital and said his horse had an ulcerated tooth which he wanted pulled. In this case the ulcerated-tooth theory was taken at par value and its location easily determined by the bulging of the superior maxillary directly over it, but no other abnormal conditions were apparent. After the tooth was extracted, which was done with the forceps, I hurriedly examined

my hands, and, finding no abrasions or scratches, omitted my usual precaution of using an antiseptic wash, and went ahead with other business.

A few days later I began to feel somewhat indisposed ; was semi-conscious of pain in the end of my left thumb ; a small ulcer appeared on my left arm ; also one on my right thumb. By the end of a week I began to fully comprehend that there was something the matter, and proceeded to investigate. All the above symptoms were becoming intensified, and coupled with chills, fever, and an inflamed condition of lymphatics extending from the ulcers to a painful swelling under my arms. Of course, it was then a clear case of septic poison, but where or when I got it remained a question for three or four days. Then the owner of the horse from which the tooth had been pulled came in with the evident intention of figuring conspicuously in arranging my epitaph, and found me nearer ready for an epitaph than he had anticipated. He said that a few days after the tooth had been pulled the mouth broke out with pimples and blisters, and he thought it had been poisoned by my instruments. From his description I readily recognized the disease above referred to, which must have been under incubation and sufficiently advanced for me to become inoculated either by the blood or saliva, and yet *not* sufficiently developed to attract attention. It later developed, also, that the inoculation had taken place at the corner of my thumb-nail, which had most likely been broken back to that extent by which the germ could find a lodgement and be introduced into the circulation, and yet the injury so slight that it was entirely unnoticed.

About the time the more aggravated symptoms of the poison began to subside I was taken with what would ordinarily be considered a bad case of bronchitis, and during its course almost all the symptoms seen in the horse were present to a greater or lesser degree.

I have been able to sit up now most of the time for nearly a week, but the prostrated and anæmic condition which a five-weeks' tussle with the disease and its complications left me in makes convalescence a slow business. During this time, however, I have had ample opportunity to consider various methods for the annihilation of animal life and carcass, a practical demonstration of which will certainly be given should I ever be permitted a chance to satisfy my revengeful nature on that horse.

CASE OF EQUINE RABIES.

BY B. M. UNDERHILL, V.M.D.,
MEDIA, PA.

PATIENT, chestnut gelding, nine years of age, used as family driver. Sunday afternoon acted strangely, restless, but symptoms slight and not regarded as important.

Monday A.M., symptoms slightly intensified. Was put under saddle for short trip; would not keep to trot (his natural gait), but persisted in a fretful gallop, a disposition and gait that his rider never before noticed; ordinarily he was said to be very docile, and used and made a pet of by all members of the family.

In the afternoon he was harnessed to a buggy and driven upon the streets. The driver noticed such an unusual fretfulness that he called the attention of a friend to the condition, and the latter walked around in front of the horse, when the animal, with jaws wide apart, made a lunge at him and attempted to bite. Shortly afterward he made a similar attempt upon a boy who ventured in reach.

He was taken to the stable and Dr. Young, of Media, called. Dr. Young regarded him with suspicion, but led him to a box-stall at his own stable, where he left an attendant to watch him during the night. While being led by Dr. Young he made two attempts to bite him, but was beaten off with a stick.

The following morning Dr. Brodhead, of Media, and myself were called in consultation, and, from what history we could get and symptoms observed, we pronounced it undoubtedly a case of rabies. At this time the animal was repeatedly stamping and kicking violently and spasmodically with one foot.

He would rush at anyone moving toward him, with mouth wide open, and thrust his muzzle as far as possible between the iron bars of his stall in a frantic effort to get at the object of his attack. Failing in this, he would seize the woodwork and tear pieces from it, on one or two occasions breaking his incisors.

It being necessary for Dr. Young to leave, the case was turned over to me, and after giving a number of the veterinary students of the University of Pennsylvania an opportunity to see him, I directed that he be shot by an expert marksman whom I had on hand in case the horse should break from his stall, which occurrence at certain periods did not seem unlikely.

Before his destruction the horse had become quite violent, kept up a constant champing of his jaws, and appeared much irritated at the crowd of a hundred or more people who had collected about the stable. The expression at no time was what is commonly called wild, but was rather one of anticipation, continually on the alert; neither pupil was dilated. He would swallow small quantities of water, and when hay was held out to him he would rush to attack it, but would take the hay and chew it normally. The constant movement of the jaws had caused a frothy saliva to collect about the lips. His attacks were always with malice and frantic attempt to do injury. During an attack he would obey the command of his attendant and jump back in apparent fear.

I could get very little history from the owner that would shed any light as to how the animal became inoculated, but I finally got it from a neighbor that three months ago the owner had a Newfoundland dog which acted strangely, hid under the barn and would not come out; he finally succeeded in getting the dog out and shut him in the stable at night with this horse; next morning found he had escaped from the stable and was never heard of afterward. I also found upon further investigation that about a month previously to this a strange dog had taken refuge under a porch on the premises, and was there shot, and was thought by some then present to be rabid. Fortunately, this horse has bitten neither man nor beast, and there will be no excursions to the Pasteur Laboratory.

We have so little chance to observe rabies in the horse that Dr. W. L. Rhoads, who was present, and myself thought the details of this case would perhaps be of interest to others of the veterinary profession.

FRACTURE OF RADIUS.¹

BY DR. L. M. KLUTTS,
CLINTON, MO.

THE subject, Prince, a favorite surrey horse. On arriving, I found my patient standing on three legs, with the fourth dangling in the air. By a careful diagnosis, I found the radius

¹ Read before the Missouri Valley Association, at Kansas City, January 13th.

had received a complex fracture about three inches above the knee, which had received such a shock that the superior row of bones seemed to move as if out of place. On manipulation I could distinctly hear crepitation of a number of pieces of detached bones. The capsular ligament of the knee was undoubtedly ruptured, and the synovia had caused that soft, puffy feeling that we so frequently have in bog-spavin, and a few other slight bruises, completed my external diagnosis. Haggard looks, fits of shivering, and quick jerking of the body indicated excruciating pain internally.

The horse ran in front of a train until he came to the guard, then jumped, and got hung between the ties, and the engine came along, struck him and knocked him against the tie with such force as to break it in two and tumble him down the embankment. I told the owner perhaps it would be a humane act to destroy him; although, if he thought best, we would take him over to his house and give him a chance for his life, to which he readily consented. We forced him to hop on three legs four blocks to the stable.

I got plaster-Paris, oakum, and material for bandages, and elevated the fractured limb about four inches, letting the hoof rest on a box, set the leg, and had an assistant hold the leg in position. I saturated the oakum in a rather thin liquid of plaster and water, applied it next to the skin, then built my plaster-Paris cast firmly around the fracture. I only used one splint, and that I fastened on behind the leg securely to the cast. I enclosed the cast and splint in a dry bandage, and turned him loose. In a very short time he lay down, being very nervous from pain, and we allowed him to lie for an hour or so. When he got up he was allowed the privilege to run loose in a paddock. I directed them to feed him on bran, oats, and good hay, and to be careful to watch him, as he would be liable to get down on the side of the fractured limb, and he would have to be turned over before he could get up.

I visited him from time to time and found the local fever and swelling gradually disappearing, until about the ninth day, I found him very restless. He lay down on the fractured leg, and in struggling to get up wrenched it pretty bad, so much so that we soon found more swelling and fever than ever. I braced up my cast and turned him loose the second time, thinking in a few days we would have suppuration from the injury, and the result would be death; but instead the swelling and fever disappeared,

and he being decidedly more careful never to lie down on that side any more until he could use it enough to get up. In three weeks I removed the cast, and I was agreeably surprised to find the bones all united nicely, but considerably enlarged, but this has gradually reduced until the leg is almost the size of the opposite one.

I have had most excellent success treating fractures in the horse and other domesticated animals in simpler forms, but this is the only time I ever had a complex fracture complicated with dislocation of a joint and rupture of capsular ligament of same to come out so well.

The chances for recovery of fractures are more favorable in good-dispositioned animals.

I seldom use slings, plaster-Paris cast, leather shield, bandages, and splints; decision always concluded on examination and finding out the surrounding circumstances, generally to turn them loose in a large box-stall or paddock, where they are free from other stock.

CASE II. Subject, Johnnie C., a blooded horse. On arriving I made an examination and found an incision about eight inches long in the abdominal region just about four inches from the anterior part of the sheath, and slightly to one side, the result of jumping on a picket and post. The small intestines had protruded and were held up by means of a bandage made from a horse-blanket, which the trainer had when the accident happened; this kept the intestines from becoming entangled in his feet until something could be done. I found the mesentery slightly lacerated and the intestines considerably congested and my patient reeling and staggering from exhaustion and pain, and had that well-marked deathly gloss in the eyes. With a bucket of warm water and a bed of nice, clean straw, which fortunately was near at hand, before I could apply hobbles to lay him down he lay down from weakness, and the assistants fastened him. I applied warm water and sponged off the dust and straw from the intestines, and proceeded to return them, loop after loop. At first I found my task exceedingly tedious on account of the distention, and thought of what a practitioner had told me a few years ago, who had a similar case, and, it being impossible to return them, he decided to enlarge the incision, and the result was, instead of a bucketful, he had a tubful and lots more ready to come. From the result of

this conversation I concluded not to enlarge the incision. I finally returned the last loop, and while I had my assistant hold them in, I prepared to stitch up the incision. I trimmed off the ragged edges of the incision and brought them together with braided silk No. 4. I made the regular surgeon's loop-stitch the entire length of the incision. I then stitched up the incision in the skin, applied a mild anodyne liniment around the wound and let him up, sent him to his stall, a distance of eight blocks, where I found him next morning, to my surprise, living and eating hay, the local injury but little swollen. But little suppuration followed, which healed by first intention. He did not miss a feed, and was soon ready to go out and work.

EXPERIMENTS WITH BARIUM CHLORIDE.¹

BY J. J. MCCARREY,
M'GILL UNIVERSITY.

THE following case-reports embody the results of some experiments recently made by the '96 Journal Club with barium chloride as a therapeutic agent in the treatment of colic. This drug was brought to the notice of the profession by Dickerhoff, who highly recommends the agent on account of its prompt and efficient action in producing peristalsis, and its low cost as compared with pilocarpine and eserine.

CASE I. Bay gelding, aged, weight about twelve hundred pounds, an experimental subject. The animal in question received an intravenous injection of 1 gramme of barium chloride in solution. In four minutes the peristaltic murmur was much increased, followed by the evacuation of feces. In nine minutes another evacuation occurred, and again in twenty minutes. The pulse and temperature were unchanged throughout.

CASE II. Bay mare, weight one thousand pounds, suffering from spasmodic colic. Was given an intravenous injection of 1 gramme of barium chloride in 8 c.c. of water. In three minutes there was considerable straining and increased uneasiness. In five minutes the animal defecated, the feces being hard in consistence. In thirty minutes after injection feces were again

¹ Read before the Montreal Veterinary Medical Association.

expelled, and at intervals of a few minutes for an hour, each evacuation being softer than the preceding. Straining was marked between evacuations, indicating violent peristalsis. In this case there was a slight increase in pulsations, respiration, and temperature. In three hours the animal showed no symptoms of colic, and the effect of the drug had apparently passed off.

CASE III. Bay mare, aged. Received a subcutaneous injection of 1.2 grammes of barium chloride in 10 c.c. of water. One minute after injection the animal appeared uneasy. In fifteen minutes after she commenced to strain, but no evacuation occurred till half an hour after receiving the injection. After this at intervals of a few minutes evacuations occurred, continuing for about an hour and a half. No change in temperature or respirations, but the pulse was slightly accelerated.

CASE IV. Brown gelding, aged, suffering from spasmodic colic. Received 1 gramme of barium chloride dissolved in about 10 c.c. of water intravenously. Feces and flatus passed in nine minutes, although straining was noticed about one minute after injection. Evacuations took place at intervals of a few minutes, continuing for half an hour, although there was an abatement of colicky symptoms immediately after the first evacuation.

CASE V. Bay gelding, five years old, showing similar symptoms to preceding case. Received 1 gramme barium chloride dissolved in 10 c.c. of water intravenously in the jugular vein. Feces were not passed till twenty minutes had elapsed, but after that at intervals of five to fifteen minutes. This case did not recover from colic for three hours, although the violence of the symptoms were much lessened after the first evacuation.

CASE VI. The subject in this case was a thoroughbred mare, five years old, and in about the fifth month of pregnancy. The animal was taken with colic at 9 A.M. Anodynes were given with warm-water injections. This treatment was continued throughout the day without any improvement. At 8 P.M., as a *dernier ressort*, it was decided to use barium chloride, the use of which had been delayed on account of the state of pregnancy in which the animal was in. At 8.15 P.M. an intravenous injection of 15 grains in 5 c.c. of water was given. At 8.19 the first symptoms of the action of the drug were noticed. The animal laid down and strained violently. Five minutes after flatus and a small quantity of almost liquid feces were passed.

Straining continued at intervals for half an hour without the passage of feces, and the colicky symptoms apparently aggravated. At 9 P.M. rectal injections of warm water were given, and an exploration revealed the fact that the colon was filled with feces, which were passed a few minutes later. The animal made a complete recovery.

LIGATION OF THE CAROTID ARTERY.¹

BY E. H. MORRIS.

THE subject was a two-year-old colt, well bred, in good condition, and of a highly nervous temperament. He had been tied near an iron picket fence, and in his restiveness tried to jump over it. The hitch rein being still tied caused him to fall on the fence, severely lacerating the deeper tissues of the neck at the lower third of the cervical vertebra, causing much hemorrhage. I was called to see the colt, but not until after every farmer who happened to be present had exhausted all his *sure* methods of arresting hemorrhage. Some had stuffed dried leaves and dirty rags in the wound, others had packed coal ashes in it, and some had even tied strings around the animal's tail to stop hemorrhage of the carotid.

When I arrived I found the animal so weak that he could hardly stand, and he was easily thrown down by pulling his head to one side and twisting it a little. After having carefully picked out all the dirt and trash I washed the wound carefully, and was able to locate the exact source from which the blood was coming. The wound, which was on the right side, was about six inches long, running in a longitudinal direction through the scalenus muscle, exposing at least four inches of the trachea, carotid artery, and vagus nerve. On observing more closely a torn place in the carotid, about one-quarter of an inch in length, could easily be seen, from which the blood was oozing.

I had never heard of the carotid being ligatured, and at first was puzzled to know what was to be done. The first thought that struck me was, How was this side of the head and face to receive nourishment? The animal was bleeding to death, and

¹ Read before the Montreal Veterinary Medical Association.

what was to be done was to be done immediately, as the pulse was already imperceptible at the submaxillary artery. I applied a strong silk ligature below the wound in the vessel, and through fear of this giving way applied another at the same place. I also put one beyond the wound; the peripheral ligature was necessary on account of the anastomosis through the vertebral into the occipital and innominate arteries.

We next washed the wound out with a carbolic solution and put eight or ten sutures in the muscle and as many in the skin, leaving an opening at the bottom of the wound for pus to escape if any should form. He was then allowed to rise, which he did with much exertion. He was so weak that he could not walk without staggering from one side to another, and would occasionally plunge forward, seemingly in a fainting or unconscious manner, into the crowd which had gathered. It was impossible to keep him quiet. Next he was given an ounce of whiskey subcutaneously, which seemed to bring him more to his senses, and he was removed to the stable, where an iodoform dressing was applied. At intervals of about three or four hours he was brought out of his box, and cold water was allowed to run over the wound for an hour or two at a time. This was to keep down the inflammation and prevent arteritis being set up. He was taken to the stable about six o'clock in the afternoon. About 9 P.M. I tried to give him a stimulating drench, when he gave a lunge and fell with his head under the manger. We concluded that worrying him by drenching would do more harm than the drench would do good, as he was very wild. We did nothing more with him till morning. Next morning the pulse was imperceptible on the injured side, but on the other side was very weak and rapid. Temperature was 98° F. and the right side of the face and the right ear were much cooler than the left, the right carotid being the ligatured one. The wound looked well and the sutures were still in good condition, much to my surprise, for I fully expected them to have been torn out. There was no great swelling and no exudate, but it was very hot and painful, so I continued the cold-water treatment.

The animal ate some green grass and drank heartily, but was still very weak, and I continued through the day to administer mild stimulants. For the next three days we kept up the cold-water treatment and tried to keep the wound aseptic. He was much stronger, the appetite returning. The owner, who lived

fourteen miles in the country, came in on the fourth day after the injury and took the animal home against my advice, for I thought the colt was too weak to make such a long trip. However, he did stand it very well, and the owner told me that the wound healed entirely, without any appreciable slough, and the sutures kept in place to the last.

The reason the sutures held so well in this case is that the wound was so painful that he could not rub against anything without causing much discomfort. I have not seen the animal since he was taken home, but the owner told me that there was not the slightest scar left, and that one side of his face was as warm as the other, and the colt seemed as well as he ever was.

CORRESPONDENCE.

EDITOR JOURNAL OF COMPARATIVE MEDICINE :

For several years I have doubted as to whether the manner of vaccination "in the human," as practised by the human medical practitioner, is proper. It seems to me that vaccination as practised at the present time must surely be behind the times. With the knowledge we have of bacterial life and the mode of infection, it seems to me that vaccination is liable to introduce into the system any and all kinds of bacteria with the virus. Of course, if strict antiseptic measures were followed, there is no danger, but as it is now done, it seems to me to be dangerous. I enclose you an instance which was taken from the daily papers.¹ I will also mention myself.

In the fall of 1873 I was in Richmond, Va.; at the time there was a smallpox scare in the neighborhood where I was staying. The Board of Health ordered every person to be vaccinated. It was done on myself on my left arm. The next day my arm pained me somewhat and kept swelling, paining more and more, swelling more and more; finally it got so bad that a physician was called, and he said it was a case of blood-poisoning, directly due to vaccination. At one time amputation of my arm was seriously considered.

¹ The above case referred to culminated in a law-suit in the Brooklyn courts for heavy damages against the vaccine physician and the Board of Health under whose direction the work was performed.

Three years ago last summer the little daughter of Mr. Charles R., of this city, was vaccinated; being intimate friends of mine, I watched the case. Vaccination was on inside of leg, about midway between knee and groin. Next day leg pained and the child cried, leg swollen, paining more and more. The father asked me to look at it and tell them what I considered the matter. I saw at a glance it was a case of blood-poisoning, and I do not think the child has fully recovered from the effects up to the present time.

I will state one more case. Mr. Michael K., stableman, employed in one of our stables. Vaccinated in 1893 in warm weather. Vaccination on left arm. Next day arm swollen quite a good deal; kept on swelling and paining; had to quit work; was laid up from work seven weeks. Amputation of arm seriously considered. Quite an area of gangrene around the point of vaccination, which sloughed out, leaving a large hole quite down to the bone. This man looks to me to be a case of tuberculosis; never fully recovered.

Now, is it not possible for the point of vaccine virus to become the seat of germ life, and when the individuals are marched up in line, the arm bared and no antiseptic precautions taken, the arm scratched and the virus rubbed into the wound, the sleeve pulled down over the bleeding wound, the patient allowed to go to work, is it not possible, I ask, for germs to be introduced, and is it not dangerous in a district where glanders, tetanus, etc., exists? I am emphatic when I say it is dangerous, and I for one do not approve of the method of vaccination as practised at the present time upon the human subject. Please do not think I am not an advocate of vaccination, I am speaking only about the method. Hoping this will bring about discussion, I am yours,

DR. H. NEHER.

NEW YORK, January 20, 1896.

The possibilities in the discovery by Professor Röntgen, of the University of Wurzburg, in the ability to detect through the remarkable properties of etheric rays, and thus diagnose tumors, growths, bony enlargements, etc., in the bodies of men and animals, may lead to a perfect revolution in the treatment of many diseased conditions, through the ability thus attained in making an absolute diagnosis.

CONTROL WORK.

An outbreak of rabies is reported at Hazleton, Pa., involving the loss of a large number of dogs, some hogs, and a few cattle, all of which were bitten.

National. Under date of February 1st the Secretary of Agriculture has issued a circular of instruction concerning the regulations of cattle transportation, specially suggested by the Act of Congress approved March 2, 1895. The lines of quarantine applying to splenic or Texas fever are denoted, commencing in California and ending at the northeast corner of Virginia where it joins Maryland. Special conditions may be allowed by the Department for individual States wishing to adopt other quarantine lines, these changes only to be for special periods, subject at any time to change and cease to exist at the end of period for which the same is granted, from the fifteenth day of February to the fifteenth day of November during each year. No cattle are to be transported from said area below the quarantine line to any portion of the United States above, except by rail for immediate slaughter, and these only under the following conditions:

1. When unloaded above said line to be fed and watered only at certain designated places set apart for this purpose.

2. At the points of destination only in certain pens, no other cattle to be allowed in the latter, and State regulations at such points to be carefully observed. Cars to be thoroughly disinfected before being again used.

3. Cars carrying such cattle shall be labelled Southern cattle, and way-bills so marked, the same rules to apply when re-shipped in other cars and way bills so designated as before, and when unloaded must be in pens set apart for these animals.

4. Instructions for disinfection of cars, boats, and pens:

- a. Remove all litter and manure; disinfect the same by mixing it with lime or saturating with a 5 per cent. solution of carbolic acid. If not disinfected to be stored in a safe place until after November 15th.

- b. Wash the cars, feeding and watering troughs with water until clean.

- c. Saturate the walls, floors of cars, fencing, troughs, and

chutes of the pens with a solution of chloride of lime, four ounces to the gallon of water. Or disinfect the cars with a jet of steam under a pressure of not less than fifty pounds to the square inch.

Cattle from Mexico may be admitted into the United States to remain below the quarantine line after inspection according to law, but said cattle shall not be permitted to cross said quarantine line otherwise than by rail for immediate slaughter, except by special permit of inspectors of Bureau of Animal Industry under regulations of the Bureau, said permit only to be granted to cattle free from splenic fever or contact thereunto during the three months preceding the issuance of said permit, and which have been grazed in a locality free from infection of such fever.

During the first eight months of 1893, 10,177; the same period of 1892, 15,614; of 1895, 22,755 head of horses were shipped abroad.

The growing value of this trade and the value of the same to our people, will be given further encouragement and support by a thorough inspection and tagging for identification so that there will be no opportunity to check its growth upon any alleged sanitary grounds.

Two experimental grass stations have been established under the Department of Agriculture, to better study the value and methods of cultivation of foreign plants and grasses.

Massachusetts. The abolishment of the Cattle Commission in Massachusetts was a topic for discussion at a meeting of some ten of the granges, when the following statement was made by one J. L. Harvey, of Lumburg, that babies fed on tuberculous milk thrive wonderfully, that nine out of ten people think the Cattle Commission unsatisfactory, and that 59½ per cent. of last year's expenses were office expenses, and that stock is injured by the use of tuberculin. Many of those present opposed the remarks, and favored letting the Commission alone, and that farmers make a great mistake in opposing the Commission. Reports of large number of cattle tested in Vermont and parts of Massachusetts were brought forward, all of which showed the reliability of the tuberculin-test. Where the animals were destroyed, in one herd, where 26 cases out of 36 were killed, and physical examination only revealed 8 out of the 26,

which were taken away from the herd some time previously. Subsequently the herd was tested with tuberculin, when the number reached 26, all of which proved tuberculous when destroyed. Eighteen out of 24 of these cases had tuberculosis of the udder. The herd was a very valuable one, and entailed a very heavy loss.

The Massachusetts Board of Agriculture, after considering the future work of the Tuberculosis Commission, unanimously adopted the following proposition as modifications of the present law: "That after June 1, 1896, tuberculin should be used as a diagnostic agent on all animals of all herds in which one or more tuberculous animals have been found; 2d. That owners of said herds shall be required to make such changes in their stables and stable-management as shall be necessary to secure to their cattle the conditions known to be essential to health; 3d. Full compensation for animals found to be tuberculous upon any inspection subsequent to the first shall be allowed only when it appeared that the owner had faithfully carried out the changes which he had been desired to make."

Dr. F. H. Osgood, Chairman of the Cattle Commission, recently addressed the Massachusetts Board of Agriculture, at Dalton, on "Rational Stable Management," taking up two of the essentials necessary for the accomplishment of this, viz., a better water-supply and a sufficient quantity of purer air. Among other statements he said that hard water may cause skin diseases; water containing sulphuric acid causes bone diseases; lime causes various troubles, and that almost all contagious diseases may be communicated through the water-supply. His comparison of the air of stables compared with that of houses, that all the exhalations of the animal's body, together with the discharges from the bowels and kidneys, which must add very much greater impurities to the air, and which in stables adhere to the woodwork and walls, giving rise to what is usually referred to as stable odor. He thoroughly laid bare in his remarks the absurd idea, which is often expressed, that emanations from manure pits are not unhealthy, and made many valuable pungent remarks on stable hygiene.

In another part of the JOURNAL will be found a decision in a case of great importance to every practising veterinarian, especially those in large cities.

EDITORIAL.

THE COLLEGE CHART FOR 1896.

THIS year will not close without witnessing severe and radical changes on the Veterinary College Chart of North America. The closing of some doors that should never have been opened seems now to be more than assured. The withdrawal of other schools from strong competition for place will almost prove a necessity. A discriminating, discerning, and educated public will draw severer lines than ever before. The better geographical distribution of these institutions will follow, and a higher, broader range of scientific instruction be demanded in places where the position of the schools seemed almost impregnable. The spirit of unrest stalks abroad in the land, and the appeal of the offspring to their college parents can no longer go unheeded. While it slumbered with but an occasional cloud of smoke, swiftly blown from sight, it gave little evidence of the depth of fire underneath, which has already broken forth in its fury at more than one point, and ere many more months have passed will be burning at others and only the protection of a higher, broader curriculum will quench the disastrous results.

The Eastern or New England States will retain the well-founded veterinary department at Harvard, and its value as an educational centre will grow stronger in attractions and worth year by year.

The Middle States, with no less than six schools to sustain and nourish, must change and concentrate her teaching power and centralize her valued and well-equipped instructors in fewer schools. New York State can hardly keep open doors at three points; all are no longer needed, and the profession will be stronger and of more worth to our people when centralization of these forces shall have been accomplished. There is doubtful place for two schools at Washington, save one becomes a post-graduate school.

Between the Allegheny Mountains and the Mississippi River no less than four schools are bidding for support, and this same territory has long been the great recruiting ground for one of the Canadian schools. With but one exception, the course of

instruction is too short in all these schools and the field of their employment to-day needs the highest grade of veterinarian that any of our schools can send forth. The sun of the narrow though well-equipped equine physician or surgeon has set, and from this time forth the needs of the hour will be veterinarians broadly and thoroughly equipped in all the branches of sanitary police, milk and meat-inspection, breeding, control work, etc., and those schools not equipped to furnish such an education will be forced to close their doors for want of support. The field of the veterinarian is well filled to-day with a class of graduates who are only a slight step in advance of the self-made men so numerous in every State of our land.

With two schools beyond the Mississippi and one on the Pacific slope, it will be many years before there is need for any more in this section. These schools are all giving a graded course of three years, of six or eight months each, and are fully alive to the needs of a higher education for the future veterinarian.

The rush to establish new schools is over for a time; the yearning to pose before the public as a professor somewhat appeased; the belief that large monetary returns awaited but for the plucking has already left some sadder but wiser. The change has been swift, but not too soon; the losses will be best for the true growth of the profession and the survival of those who are well equipped for the great responsibilities of teachers, will find places of worth in strengthening the schools that shall remain after the storm that has so rudely awakened us all to the greater requirements demanded for the future successful veterinarian.

LEGISLATION IN 1896.

THIS year should prove a fruitful one in the history of successful legislation of great importance to the veterinary profession, and it becomes the duty of veterinary journalism to keep the profession fully aware of all the different movements and advised, so far as possible, of the merits of these proposed statutes, national, State, and local. To do this we must ask at the hands of every State and local organization that we be kept posted in advance of all proposed legislation, and, so far as pos-

sible, by individual veterinarians of any acts pending before legislative bodies in which the veterinarian has a direct or indirect interest. Our columns will be freely opened for the discussion of the merits of these various acts, while our editorial pages will be outspoken in judgment of the value of the same. The JOURNAL has but one chief purpose for its aim, as all its readers must well know by this time, and that is the true advancement in every direction of the profession we represent. Our watchword, to "lead Veterinary Journalism in America," as in the past, will not allow us to spare time or money to fully sustain our worth and influence, and our reward will be in the hope that we have discharged well the serious responsibilities that journalism imposes.

To-day every veterinarian should give his support and exhibit his interest in three Acts now pending before Congress, one of which aims to give rank to veterinarians in the army, and is ably championed by the Army Legislative Committee of the U. S. V. M. A.; a second, Senate Bill 538, introduced by Mr. Sherman, looks to increasing the army and enlarging the number of veterinarians accordingly, with rank designated them; a third, looking to the establishment of a board of registration and examiners for the District of Columbia, should also become a law, and the one point at variance among the veterinarians, as to the composition of the board, should be yielded rather than endanger the passage of the Act.

In New York State some mischievous legislation needs to be looked after and effectually killed. It begins to look as if these repeated efforts to open the doors for registration, save through the channels now properly lodged in the State Board of Examiners, had for its aim some sinister purpose. The correction of the Jury Duty Bill, that its provisions may be enjoyed equally by New York and Brooklyn, should be insured of successful passage.

The proposed plans to enlarge the powers of the State Board of Health in both controlling bovine tuberculosis and extending their aid to local boards, and insuring to the people of the Empire State greater freedom from the dangers of an impure and unwholesome milk- and meat-supply, should be given by every veterinary organization and member of the profession the most earnest consideration. For if greater relief is not afforded by the legislature, *dernier* local measures will be invoked by many of the cities which will work great hardship on the agri-

cultural interests, whose prosperity and protection the veterinarian must sustain and encourage, for his own interests lie largely in the same broad field.

In Massachusetts some proposed modifications of the regulations governing the Tuberculosis Commission have been prepared, and as they are of interest and importance to the public at large, whose guardian in part the veterinarian has become, they should receive earnest consideration at the hands of our members.

In Iowa important and far-reaching changes in dealing more thoroughly with questions involving the purity of the food supply are now pending, and they merit the support of every veterinarian.

In every State where to-day exists large slaughtering establishments involving a national supervision there should be the most cordial and closest coöperation of local authorities to prevent the placing on the home markets that which has been condemned as unfit to be sent abroad for foreign consumption. Self-preservation, like charity, should begin at home.

Legislation in Illinois, Michigan, Virginia, District of Columbia, and other States is under preparation, and in these days of violent partyism, the worst slavery on earth, vicious legislation seems easier of accomplishment than that which is for the common good, and the spoils-system favors and privileges away that prove burdens to our people and prejudicial to their welfare and prosperity.

VETERINARIANS of New Jersey should have the Act recently introduced into their State Senate, establishing a Bureau of Animal Industry, so amended that at least two of such Board should be competent, qualified veterinarians. Such appointments are likely to be more satisfactory when made by the Governor rather than when left to one specially interested in but one side of the question. We make this suggestion without any knowledge of who the present or future President of the Board of Agriculture may be, but as the questions involved in this movement have so direct an importance to the whole people from a health point of view, they should be able to immediately place the responsibility for any failure to receive the great benefits to be derived from such proposed legislation as this.

THE successful prosecution by the Examining Board in Ohio, under the direction of Messrs. Meyer, Gribble, and Howe, for violation of the law regulating the practice in the Buckeye State, will teach a wholesome lesson to impostors and those parasites of the profession who have long fed upon the credulity of an innocent, unsuspecting public. There are other Boards that might learn a lesson here which would end the farce that their act threatens to become if a more wholesome respect is not soon taught for its provisions.

MARRIED.—At Germantown, Philadelphia, February 12, 1896, by the Rev. James Lisk, Dr. Frank Kirk Nice, graduate of the American Veterinary College, to Miss Gertrude Louise Pullinger.

NECROLOGY.

At Jersey City, January 30, 1896, W. T. J. McLaughlin, V.S. Dr. McLaughlin was a graduate of the New York College of Veterinary Surgeons, and at the time of his death held a position as Government Meat-Inspector at the Jersey City abattoirs.

The death of Dr. Jno. N. Navin, at Indianapolis, Ind., on January 4th, at the ripe old age of eighty-five years, removes from the veterinary profession one of its oldest members. Dr. Navin always evinced a keen and observant interest in the all-important question of horseshoeing. His pen was always actively wielded in the interest of his adopted vocation, and several books were issued, relative to the diseases of horses, that served a good purpose at the period when they were issued.

Dr. Nat. Carlin, of St. Louis, Mo., died of pneumonia on January 31st. He was well-known among turfmen, and was well-known as a writer of pedigrees. At one time he had general charge of General Grant's stock-farm in Missouri.

SOCIETY PROCEEDINGS.

ABSTRACT OF STENOGRAPHER'S REPORT,
U. S. V. M. A.

(Continued from page 70.)

THE second day's session convened with a much larger attendance than the day previous. The name of Veterinarian Desmond, of Warnambool, Victoria, was recommended for honorary membership by Drs. Harrison and Stewart and referred to the *comitia minora*.

The Secretary was requested to read a letter from Dr. L. McLean relative to the Prize Committee, and asking that he be relieved from any further duty in connection therewith. Dr. Lyman, a former Chairman of the Prize Committee, referred to the fact of no papers being submitted during his term of appointment.

The report of the *comitia minora* was read and received, and their recommendations as to membership were approved.

The charges of violation of code of ethics against Dr. Geo. H. Burns were sustained, and it was agreed that he be given an opportunity to remove said violation.

The communication from the Acting Secretary of the Association of Faculties relative to the open letter of Prof. Liautard was received, and their recommendation, that a joint committee of the two Associations draw up a suitable reply, was concurred in. After which a motion that said committee consist of Drs. Hoskins, J. C. Meyer, Jr., and W. L. Williams was adopted.

Section E, of the report of Committee on Diseases, was called for, and Dr. S. J. J. Harger responded, dwelling upon glanders and the best methods of extermination, the use of mallein, etc. Incidentally he referred to the various infectious and contagious diseases prevalent in Pennsylvania.

Section C, which covered Southern cattle fever, had been assigned to Dr. S. S. Dinwiddie, in whose absence the report was read by Chairman Trumbauer.

The President declared the report open for discussion. Dr. Williams responding, referred to the criticism of his statements as to the existence of glanders in the Rocky Mountains. Alluding to the mild form which often prevails, he also outlined three very acute cases, with great structural changes, which had come under his observation, and most emphatically contradicted the inference made in the report that these were chronic cases of malignant catarrh. He recorded satisfactory results with mallein as a diagnostic agent. He also referred to spasm of the glottis, which frequently occurred in epizootic form. He criticised the great length of the report of the Committee on Diseases, particularly as a similar length of time could not be accorded for its discussion.

The five-minute-rule for discussion was, on motion, adopted. A motion first prevailing that the discussion of that part of the report on tuberculosis be postponed until the other papers on that subject be read; carried.

Dr. Mayo criticised the lax manner that prevailed for the suppression of glanders and how it was allowed to spread through the concession to ignorant pretenders who claim to cure these cases.

Dr. Salmon thought that the claim that the true germ of contagious pleuro-pneumonia had been discovered was not to be accepted too hastily, as others who had most thoroughly investigated this subject had failed. As to Texas fever, he believed it was spread by other channels besides the ticks. He believed that Southern cattle could hardly at any time be considered immune, as one at Washington, after six years' isolation from its native heath, still retained in its blood propagating powers by which the disease was reproduced experimentally.

Dr. T. J. Turner, in speaking of his conversion to acceptance of the tick-theory, said that the Board of Agriculture, of Missouri, instruct their sanitary officers to quarantine where the ticks are found.

Dr. Cary asked the question if it would not be practicable to allow these Southern cattle to be removed into Northern districts that the ticks might be removed.

Dr. Salmon, in reply, admitted the possibilities of this plan, but referred to the great difficulty of removing all the ticks, and that dips now recommended had in some instances killed the cows as well as the ticks. Further experiment in this direction was under investigation.

The chemical nature of the dips being asked for, it was stated that usually crude carbolic acid was the basis, though almost everything had been tried, experimentally, in the laboratory.

Dr. Peters referred to some dogs reported to have been affected with an anthracoid form of disease, but which laboratory research failed to find the bacillus anthracis, but in all of the cases a belted germ was observed.

Dr. A. H. Baker, who had reported these cases, first stating that it was not confined to any one breed, was not infectious, the animals were not disposed to bite one another, no inclination to gnaw, that the jaw drops, tongue protrudes, is of a dark color, the disease terminating fatally in from four to twenty-five days. He did not consider it rabies. The head of the Pasteur Institute at Chicago considers it a form of rabies.

Dr. Peters said in Nebraska the disease was confined to bird dogs, and he believed it infectious.

Dr. Faust believed it to be the dumb or mute form of rabies.

Dr. A. H. Baker believed there was no rabies without delirium and a disposition to gnaw and bite.

Dr. Lyman reported an outbreak in Boston of a similar type, and, after laboratory investigation by Dr. Ernst, the conclusion reached was that it was dumb rabies.

Dr. Salmon said the diagnostic point of rabies is the possibility of transmitting the disease by reason of contact, after the mode of Pasteur. If you have a disease you can transmit it to a rabbit or other small animal, and it runs through the typical course of rabies in those animals; so far as we know from the present condition of that disease, it must be rabies.

Dr. Lyford, after a number of experiences, in many of which he endeavored to assign causes for the symptoms exhibited, and on which many autopsies were held with varying unsatisfactory lesions, concluded that these cases were a form of rabies.

Dr. Pearson referred to many cases seen in Philadelphia, and of similar symptoms, such as foreign bodies in the stomach of those destroyed in the furious form and those succumbing to the mute form. Inoculations into the brain of rabbits brought practically the same symptoms as those diagnosed as dumb rabies.

Dr. Schwarzkopf wished to take exception to the disposition of some to consider this disease allied to diphtheria, as the latter seemed to be only an affliction of the human race.

Dr. Walrod reported a case of rabies in a cow, supposed to have originated from a bite from a dog, the latter having been bitten in a fight while away from home by a strange dog, the dog having died suddenly with obscure symptoms.

Drs. Brenton and Meyer also reported similar experiences of cases they termed dumb rabies.

Dr. T. J. Turner, speaking of the subject of anthrax, reported the outbreak in Missouri, where six cows, three mules, twenty-two hogs, and one sheep succumbed to the outbreak. The first cow, dying suddenly, was hauled out by the owner and skinned and fed to the hogs. The farmer became inoculated in handling the carcass. The disease had been transmitted to this farm through a city sewer which passes through the premises. Vaccination with anthrax lymph was under adoption, with favorable results so far.

After a brief reference to actinomycosis and usages in condemnation at the Union Stock Yards at Chicago, on motion the discussion closed.

The report of the Prize Committee being called for, Chairman Dr. Tait Butler responded with an individual report, as no papers had been offered, and, pending the filing of such, he had delayed conferring with his colleagues, and felt that this explanation was due the convention and in justice to Dr. L. McLean, one of the members of the committee.

The report, on motion, was accepted, and the President asked what action would be the pleasure of the convention as to the recommendations made.

On motion, the convention concurred in the recommendations of the Chairman.

The Secretary, at the request of the Chair, read, in the absence of Chairman Wm. Dougherty, the report of the Committee on Act of Incorporation.

The Committee had been unable to secure favorable action on the proposed measure, and, on motion, the report was received and the Committee continued, as it was special in character.

The Secretary, at the request of the President, read the report of Chairman J. P. Turner, of the Army Legislative Committee. The report bore a very sanguine and hopeful aspect for successful termination of this long and trying struggle for recognition at the hands of the incoming Congress. On motion, the report was accepted. The question of furnishing the Committee with funds in the face of an empty treasury was referred to the *comitia minora*.

The Publication Committee, owing to the low condition of the funds of the Association, reported the inability of the Committee to publish the proceedings of the meeting for 1894. Dr. Osgood, referring to the deficit, thought it would be well for the Association to be better informed as to the cause of this deficit. The President responded by saying that the Associa-

tion had about four hundred members, that the annual dues were \$2.00, that the publication of the proceedings for '92 and '93 had cost each year, when delivered, over \$800.00, thus the Association was handing back to its members more than received from them, besides leaving no money for committees, officers' expenses, etc. Hence, the resolution adopted at Philadelphia to make the annual dues, for and after 1895, five dollars per year.

Dr. Williams in a brief manner referred to the importance of the work of the Finance Committee, and also the Publication Committee, and said greater care should be exercised in their selection.

The Secretary's report followed, which referred to the arduous duties of this post and the difficulties labored under during the year just closed.

With the exception of the State Secretary's report for Massachusetts, the other State reports were read by title and referred to the Publication Committee. By special request that of Massachusetts was read. As the report dealt specially with tuberculosis, its discussion was laid over for consideration in conjunction with the latter subject.

Resolutions on the deaths of members Bryden, Leis, Paaren, and Middleton were read and adopted.

The afternoon session convened at 3 o'clock, and, after some preliminary work, the election of officers was reached, resulting in the following choice for the ensuing year: President, W. Horace Hoskins, Philadelphia; Eastern Vice-President, F. H. Osgood, Boston; Central Vice-President, C. C. Lyford, Minneapolis; Western Vice-President, R. H. Harrison, Atchison; Secretary, S. Stewart, Kansas City, Kansas; Treasurer, James L. Robertson, New York City.

The President then called for new business and referred to the criticism made of the length of time allowed committee reports, and asked for an expression of opinion of the convention on the subject.

Dr. Harger, referring to the necessity of a limit of time to committee reports, suggested a committee to review these reports, to abstract them, bringing out the leading features of each report; another committee to take in charge the papers; also, that members should be designated to discuss salient features of reports and papers.

Dr. Osgood thought that most chairmen and those preparing papers would object to having the same altered by a committee. He thought the best plan would be a division of time and the allotting of specified periods of time for each report, paper, etc.

Dr. Mayo, in agreeing with the views of the preceding speaker, moved that the reports of the various committees be limited to thirty minutes.

Dr. Harrison suggested the referring of reports of committees, Corresponding and State Secretaries' reports, without reading, to the Publication Committee, and they to select any salient features desirable to be brought before the Association, and thus grant more time for the consideration of papers.

Dr. Faust favored the time-limit suggested by Dr. Osgood.

Dr. Salmon, in complimenting the excellent work done on the committee reports presented, regretted the lack of time to take up and properly discuss the many subjects elaborated upon. He thought a half or three-quarters of an hour should be allowed for these reports, and that the several subjects should be read and discussed singly.

Dr. Williams thought it was essential that members should know in advance what limit of time was to be allowed the different subjects on the programme; that each year the importance of committees would differ and the personnel would also be a factor to be considered. He thought this matter would be safer in the hands of the *comitia minora*, where reasons or appeals for greater time could be filed as occasion or circumstances demanded. He thought a maximum limit of time might give license to a minor committee, and closed by making a motion to delegate this power to the *comitia minora*.

Dr. Cary asked whether it would not be feasible in limiting time to important committees when important matter was left out or hurriedly reviewed to have the same referred to the Publication Committee.

The motion to place this matter in the hands of the *comitia minora* was seconded and carried.

Dr. Williams then referred to the necessity of granting the Publication Committee power to abstract reports, etc., so as to restrict the great cost of publishing our transactions.

Further discussion of the subject was closed by the Chair and the subject of tuberculosis announced.

The first paper offered on the subject was by Dr. W. B. Niles, of Ames, Iowa. After its reading the President, on behalf of the Iowa veterinarians, extended a cordial invitation to all in attendance to join in accepting the pleasure of a theatre party in the evening.

The paper was then opened for discussion, together with the report of the State Secretary of Massachusetts.

Dr. Mayo reported a case where marked reaction occurred at two periods five and a half months apart, and autopsy failed to reveal tubercular lesions.

Dr. Niles desired to know if injection of tuberculin in mild cases had any tendency to make the disease more acute.

Dr. Reynolds reported results in two herds where injections were kept up for a number of weeks after reaction had led to condemnation, and from the slight lesions revealed on autopsies he was fully convinced that tuberculin in the bovine species did not increase the disease. In one case where extensive lesions were found the animal had maintained an extremely healthy and vigorous appearance up to the hour of her destruction.

Dr. Niles reported the experience of a physician in Iowa in using tuberculin as a curative agent in five cases; in two cases result reported as very satisfactory, one barely satisfactory, and the other two doing fairly.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

A REGULAR meeting of the Association was held in the Library on December 19, 1895, the Honorary President, Dr. D. McEachran, in the chair. Owing to the proximity of the holiday season the attendance was somewhat less than usual. The minutes of the previous meeting having been read and confirmed, Mr. C. H. Higgins requested that the Secretary be instructed to secure for the Library the Experiment Station *Record*, also the reports of the Bureau of Animal Industry of the United States Department of Agriculture.

Mr. J. Anderson Ness, on behalf of the '96 Journal Club, reported some interesting and successful experiments with barium chloride as a therapeutic agent in the treatment of colic. Observations on several cases were reported in detail, which added interest to the report.

Mr. Fred. W. Kee then presented a paper on "Actinomycosis Bovis." Inasmuch as the disease is either increasing or is more promptly recognized than formerly, the choice of the subject was a fortunate one, and the essayist dealt with the matter in a most pleasing manner. Particular emphasis was directed to the fact that many diseased animals which would be rejected as unfit for food in the larger cities, where a system of veterinary inspection exists, are nevertheless placed upon the markets elsewhere, and ultimately find their way into the food-supply. A lengthy discussion followed the reading of the paper, the essayist ably defending his position. Dr. Adami favored the meeting with some remarks on the nature of the disease in man, while Dr. McEachran referred to the disease as manifested among range-cattle in the Northwest.

Mr. E. H. Morris reported a rare case of surgical interference. Called to see a colt which, as the result of an accident, had lacerated one of the carotids, he applied a ligature to the vessel, and eventually was rewarded by a complete recovery, the nutrition of the area supplied by the vessel being effected by the collateral circulation.

Members were appointed to serve on the Experimental Committee, the essayists for the next meeting notified, and adjournment took place.

THE Association met in the Library of the Faculty of Comparative Medicine, January 15th. The chair was taken and meeting called to order by the President, Dr. Baker. Roll-call showed a good attendance of members. The minutes of the previous meeting were read and adopted.

It was decided to add to the Library the *Journal of the American Public Health Association* and also those of the Paris Health Department.

Mr. Harry Dell furnished the case-report for the evening. The case was one of interest on account of its comparative rarity. The subject, an aged deerhound bitch, was brought to the hospital in a dying condition, with no history of previous illness, the only symptom having been noticed being anorexia. Was declared by the man in charge to be well advanced in pregnancy, but physical examination revealed a large amount of fluid as the cause of distention. Death occurred during the night, and the post-mortem brought to light the existence of extensive pathological processes. The most worthy of notice were the presence of a large adeno-carcinomatous growth of the liver, metastases in the lungs, peritonitis, and ulceration of the duodenum. In the discussion following Mr. Higgins stated that curiously enough, Dr. Martin, in an autopsy on a deerhound a few days previously, had encountered a similar condition of the duodenum. This animal had been chloroformed on account of the existence of chorea.

Mr. S. Macnider presented a paper on "Navicular Arthritis and Neurectomy," describing the nature, symptoms, and course of the disease and the indications for operation. A question as to the value of frog-setons in the surgical treatment in this disease arose out of the discussion following, it being in the opinion of many of the members that if an affected animal be given the rest and hygienic surroundings that are necessary after the insertion of setons, but omitting the latter, the results would be as favorable.

Regarding neurectomy it was said to be a palliative treatment, and the feet of the animals, after the operation, should receive particular attention for obvious reasons.

Mr. J. J. McCarry promised a paper on "Post-mortems," and Mr. J. Anderson Ness will furnish the case-report for the next meeting.

The members of the Experimental Committee were then appointed and the meeting adjourned.

HARRY H. DELL,
Secretary-Treasurer.

VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION.

THE fifth regular meeting was held in Richmond, January 2, 1896, in the Veterinary Hospital of Dr. W. H. Harbaugh. The meeting was called to order at ten o'clock A.M., by the President, Dr. W. H. Harbaugh. After the reading and approval of the minutes of the previous meeting, the report of the Board of Censors was read. Dr. Thomas M. Sweeney, V.S., of Richmond, and Dr. W. F. Henderson, M.D., of Blacksburg, were elected to membership. Dr. George Ben Johnston, M.D., of Richmond, was elected an honorary member.

The Committee on Jurisprudence and Legislation, through their chairman, Dr. W. H. Harbaugh, reported that on September 25, 1895, a negro blacksmith was tried in the police court of the city of Richmond, on the charge of cruelty to an animal, for having burnt a horse's mouth with a heated iron to cure the lampas. The case was prosecuted by the Society for the Prevention of Cruelty to Animals, and was stubbornly contested by the defense. Five veterinary practitioners, three medical doctors, one dentist, and two horsemen testified that the practice of burning for the condition called lampas was cruel and unnecessary, and many other witnesses were present to testify to the same effect, but the justice said the prosecution had introduced enough evidence. The owner of the horse testified that the horse improved after the burning. Three liverymen testified that the operation was beneficial, and that after horses were burnt they always regained their appetites. The defendant testified that he had burned between 1500 and 2000, and had never seen any bad results. Counsel for the prosecution requested that if a fine was imposed on the defendant, the fine be remitted, as this was only intended as a test-case. In summing up the justice said he must be governed by the expert evidence, and was compelled to decide that the operation was cruel, but as it had been a long-established custom, and as he did not think the blacksmith intended any cruelty, he would discharge him, but any other cases brought before him would be tried on their merits. As this was the first case of the kind ever prosecuted in this State, the Committee consider the decision of the court fair and just. They also consider it a great victory for the veterinary profession, as it will effectually check the barbarous practices of the many pretenders who dupe ignorant horse-owners. The Committee reported this case to the President of the S. P. C. A., with the request that a test-case be made of it, with the hope that a favorable decision could be obtained, in order to stop a severe infliction of pain for an entirely imaginary condition. Ever since he had

been a veterinarian, Dr. Harbaugh stated, he had carefully looked for disease of the bars of young horses' mouths, and had never seen in the condition called lampas the slightest evidence of disease. No such disease exists; the condition is normal, and the ignorant should be taught not to interfere with it. Abnormal condition of the gums that requires attention does not necessitate any interference with the bars. We should cease to use the term lampas even in connection with disease of the gums.

From this same Committee a report was made upon the subject of legislation, which elicited a great amount of discussion. The action of all the States to the north of Virginia in the matter of stringent veterinary legislation, by driving a horde of quacks into this State, forces upon this Association the careful consideration of this question. It was finally agreed to ask the Legislature now in session to give us a law creating an examining board; a law practically the same as that governing the practice of medicine in this State, modified to meet the requirements of the veterinary profession.

A recess was taken to attend a clinic at the Old Dominion Hospital, by invitation of Dr. George Ben Johnston. The Association was delightfully entertained by the Doctor in the hospital amphitheatre by an entertaining talk upon the various intricacies of septic and antiseptic surgery, illustrating his remarks. Afterward the Association was entertained as the guests of Dr. Johnston, in the faculty room of the Medical College of Virginia, at an elegant collation.

The Association reconvened at 5.30 P.M., and the Committee on Resolutions (W. T. Gilchrist, chairman) reported as follows: Whereas, murrain, or Texas cattle-fever, exists in this State annually to a much greater extent than is generally known, destroying many cattle during certain seasons of the year, and almost threatening ruin to the cattle-industry of the State; and, whereas, tuberculosis exists to an alarming extent among dairy herds of the State, as proven by the best-known means of diagnosis, viz., the tuberculin test; as an instance, one herd of one hundred and thirty-four head of cattle in the vicinity of Richmond, formerly supposed to be healthy, tested by experts from the U. S. Department of Agriculture, showing 71 per cent, or ninety-five head diseased; and, whereas, Virginia has no efficient laws for the control of these or any other infectious diseases of animals; and, whereas, the U. S. Department of Agriculture has no power to interfere with the traffic of the live-stock of the State, except in so far as the Interstate Commerce Law is concerned; and, whereas, it seems to be the tendency on the part of certain governmental and other officials to suppress facts relating to the above-mentioned disease; and, whereas, the stock-breeders of Southwestern Virginia have met and appointed a committee to secure adequate laws for the control of these and other infectious diseases of animals; and, whereas, said stock-owners have recognized the fact that the veterinary profession of *this* State is the proper source from which to obtain reliable information in regard to animal diseases in this State, and have therefore appointed one of our members as a member of their committee, and, furthermore, said committee asks for the assistance of our Association; therefore, be it resolved: 1st. That we fully realize the necessity of proper laws to control and prevent the spread of contagious diseases, and that we deplore the secrecy practised in such matters at the expense of public funds and to the detriment of the true interest of the live-stock industry; 2d. That this Association aid the committee of stock-breeders from South-

western Virginia in any way within its power so to do; 3d. That a copy of these resolutions be sent to said committee of stock-breeders, and that these resolutions be spread upon the minutes. After considerable discussion the resolutions were adopted.

The time having arrived for the reading and discussion of papers, Dr. Faville, of Norfolk, read a paper on "Osteoporosis,"¹ and was followed by Dr. M. D. Hoge, Jr., M.D., of Richmond, with a paper on "Bone-softening." The discussion following the reading of these papers was of considerable interest to the members. Dr. Hoge's paper was beautifully illustrated with microscopic specimens of affected bone, and the complete collection of specimens of osteoporosis and actinomycosis shown by Dr. Harbaugh filled the papers well. Dr. Harbaugh read a paper on "Texas Fever," which was listened to with great interest. The specific micro-organism was nicely shown, as were also the ticks found upon the cattle affected. The discussion of this disease was of peculiar interest to the members, because of the location of the government quarantine-line across the State. The results of a series of experiments and observations to be made by Drs. Harbaugh and Niles during the next season will be awaited with interest.

At 9 P.M. the Association adjourned to meet around the banquet table at Evenson's as the guest of Dr. Harbaugh. The hospitality of our President was greatly enjoyed.

At 10.30 the Association was called to order again to listen to a paper by Prof. E. P. Niles, of Blacksburg, Va., upon "Immunity."² This was followed by a general discussion of the subject of "Serum-therapy."

After extending the thanks of the Association to Dr. George Ben Johnston for his very profitable and pleasant entertainment, and instructing the Secretary to compile the proceedings and papers of the various Association meetings for publication, the Association adjourned at 2 A.M., January 3, to meet in Norfolk in June.

The Association has grown from a weakling of two years ago to a healthy organization, and all the members realize that the mutual benefit derived from our meetings is without measure. While in Virginia at the present time there is no legal veterinary profession, we hope and know that the influence emanating from our Association will ultimately secure for us the recognition that is our due.

GEORGE C. FAVILLE, D.V.M.,

Secretary.

MAINE VETERINARY MEDICAL ASSOCIATION.

THE semi-annual meeting of the Maine Veterinary Medical Association was held at the Greble House, Portland. The meeting was called to order, with President Bailey in the chair. Drs. Lord, Huntington, Choate, Russell, Perry, Purcell, Joly, Long, and West answered to the roll-call. The minutes of the previous meeting were read and approved. Dr. P. L. Stevens, of Farmington, was unanimously elected to membership. The following officers were unanimously elected: President, Dr. F. L. Russell, Orono; Vice-President, Dr. J. W. Huntington, Portland; Secretary, Dr. W. L. West, Ellsworth; Treasurer, Dr. A. Joly, Waterville.

¹ Will appear in April number.

² Published in this number,

Dr. West read a paper on "Hemorrhagic Enteritis," which was freely discussed. Dr. Bailey then made some remarks anent the tuberculin test, which called forth a spirited discussion and resulted in a vote by the Association that: 1st. The tuberculin used by members shall be that prepared by Koch and known as Koch's tuberculin. 2d. The minimum price for testing cattle shall be: For 20 or less, \$1.50 per head; for 20 to 30, \$1.25 per head; for 30 or more, \$1.00 per head.

The meeting then adjourned to meet at Lewiston, July 15th next.

W. L. WEST, V.S.,
Secretary.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

THE regular meeting was held on Tuesday evening, February 4th, at 8.30 o'clock, with the President, Dr. Huidekoper, in the chair. On roll-call the following members responded, viz.: Drs. Amling, C. C. Cattnach, J. S. Cattnach, J. S. Cattnach, Jr., Dickson, Delaney, Ellis, Ferster, Foy, Giffen, Gill, Huidekoper, Hanson, Jackson, Lamkin, Lellman, MacKellar, Neher, O'Shea, Ryder, Serling, and Turner (22). The minutes of the last meeting were then read and approved. The minutes of the December meeting were next read and, after slight correction, approved.

Dr. Gill, Chairman of the Board of Censors, reported that the Board recommend that Dr. Johnson be notified to be prepared to meet charges at the next regular meeting. It was then moved and seconded that the Secretary be authorized to formulate charges against S. K. Johnson and forward same to him, and that the Secretary notify Drs. Turner and Finley to have all their evidence ready to be acted upon at the next regular meeting.

The Board of Censors also recommended that a resolution be sent to the Board of Health to the effect that all appointments for milk- or meat-inspectors be made from graduates of veterinary colleges. Moved and seconded that the President appoint a committee of five to attend to it; carried. The Board of Censors also recommended that the Society endeavor to hold its meetings at the Academy of Medicine, suggesting that such a course would add to its prestige. It was then moved and seconded that the President should appoint a committee of three to ascertain the cost of a room in the Academy of Medicine suitable for the Society's meetings, and report at the next meeting; carried.

Dr. O'Shea, Chairman of the Committee on Legislation, then gave a lengthy report of the able work done by that Committee, assuring the members that the Extension Bill for registration was killed, at least for this year, and that the Jury Bill would probably be through by the next meeting. It was then moved and seconded that the report be accepted and placed on file; carried. Moved and seconded that a vote of thanks be extended to the Committee on Legislation; carried.

Dr. Lellman then read a paper on "Calcified Nodes in Lungs of Horses," which was afterward discussed by the members.

The President then appointed the following committees, viz.: As a committee to draft resolutions to the Board of Health in reference to the appointment of meat-inspectors, Drs. H. D. Gill, J. S. Cattnach, H. Neher, J. E.

Ryder, and F. W. Turner and as a committee of three to ascertain the cost of a room at the Academy of Medicine, Drs. H. D. Hanson, J. H. Ferster, and T. Delaney. Moved and seconded that a vote of thanks be extended to Dr. Lellman for his paper; carried. Moved and seconded that the meeting adjourn; carried.

R. W. ELLIS, D.V.S.,
Secretary.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

THE fourteenth annual meeting was held in the parlors of New Grand Hotel, Lansing, Mich., February 4 and 5, 1896. President George C. Moody, of Mason, called the meeting to order at 7.30 P.M., Tuesday, February 4th. Roll-call showed the following members present, viz.: Drs. J. Hawkins, D. G. Sutherland, D. Cummings, J. A. Dell, S. Brenton, E. A. A. Grange, J. W. Ferguson, C. W. Stowe, B. C. McBeth, J. C. Whitney, William Jopling, George C. Moody, W. W. Thorburn, G. W. Dunphy, T. G. Duff, G. H. Carter, W. A. Giffen, A. Campbell, R. H. Kestell, James Drury, W. M. Burdick, James Harrison, H. M. Gohn, W. A. McLean, J. D. Rutherford, Judson Black, and Wallace McQueen. Drs. A. McKercher, H. F. Palmer, F. M. Blatchford, George E. Metcalf, and J. B. Stevens were present as visitors.

President Dr. George C. Moody delivered the annual address of welcome. After thanking the Association for the honor conferred upon him in electing him President and expressing a hope that the meeting might prove a satisfactory one, he went on to say to the members that it was not his intention to tire them with a long address, as he thought the time could be more profitably occupied in discussion of questions which will be more beneficial to us in our future practice and would also have a tendency to make our meetings more interesting, and that as we had a very good programme to work from, there was no doubt but what we would have a good opportunity to exchange ideas in the discussion of papers, and the several reports would no doubt make the meeting one of interest and zeal. He said there were a great many advantages to be gained by attending these meetings, and that it should be a continued effort on the part of every member to make our meetings a success. He said this might be accomplished by members keeping records of cases that are of peculiar nature, with the treatment thereof and of the results obtained, and reporting them at our meetings, which will be of great importance to us in the way of bringing forth discussions and the knowledge of new remedies and appliances, which will serve to make us more proficient in their use and at the same time advance us in the practice of our profession. It also gives us a chance to meet and become acquainted with our brother-practitioners as well. Herein lies the secret of having good attendance, the elevating of the profession, and a desire on the part of practitioners to become members of the Association. It will also be the means to assist in the abolishing of empiricism and quackery.

One thing more I will mention as an adjunct to keep up the interest in our profession, that is, the veterinary journals. They are something that should be found in the office of every veterinarian; by them you will not

only be able to keep pace with what is transpiring in veterinary science at home, but may learn much of the doings and progress of the profession from across the ocean, in our sister countries. As there are a number of these journals edited and the subscription price within the reach of all, he most earnestly recommended the taking of some one of them if not already subscribers. In this connection the President gave the following quotation: "He who does not fertilize his mind with the current literature of the day will soon become barren. A man cannot become mentally great by his own thoughts and information."

He also spoke at some length on the question of legislation, being heartily in favor of it; he said that if every one would put his shoulder to the wheel there was no doubt in his mind that we could secure the passage of a good liberal Act. After calling attention to an amendment to our code of ethics to be voted on at this meeting, he concluded, by saying: "To the Secretary, Dr. Jopling, too many thanks cannot be given for the excellent work he has done this year, like years past, in the interest of the Association."

It was moved and supported that a vote of thanks be given President Moody for his excellent address and that the same be spread upon the minutes; carried.

Minutes of previous meeting were read and approved. The following gentlemen made application for membership: Dr. A. McKercher, Lansing-Ontario Veterinary College, year 1893. Vouchers, Drs. James Drury, V.S.; H. M. Gohn, V.S. Dr. H. F. Palmer, D.V.S., Napoleon, Veterinary Department, Detroit College of Medicine, 1895. Vouchers, C. M. Higginson, D.V.S.; J. D. Rutherford, M.D.V.S. Dr. F. M. Blatchford, V.S., Brighton, Ontario Veterinary College, year 1893. Vouchers, H. M. Gohn, V.S.; William Jopling, V.S. Dr. George E. Metcalf, D.V.S., Detroit, Detroit College, year 1893. Vouchers, J. D. Rutherford, M.D.V.S.; S. Brenton, V.S. Dr. R. H. Alexander, V.S., Leslie, Ontario Veterinary College, year 1892. Vouchers, George C. Moody, V.S.; H. M. Gohn, V.S. Dr. J. B. Stevens, V.S., Yale, Ontario Veterinary College, year 1891. Vouchers, W. M. Burdich, V.S.; William Jopling, V.S. The applications were referred to the Executive Committee, who reported favorably on them all. The report was accepted and adopted, and the Secretary instructed to cast the ballot of the Association for them collectively. Ballot was so cast, and the six applicants declared duly elected to membership.

Secretary's report was read and ordered filed and a vote of thanks extended.

The Treasurer's report was read and referred to the Finance Committee.

At this time a recess was taken for payment of fees and dues. When called to order again, Dr. Drury reported for the Finance Committee that they found everything correct in connection with Treasurer's books.

Report of Finance Committee was accepted and ordered filed.

Prof. J. D. Rutherford, of Veterinary Department, Detroit College of Medicine, made a very able report for the Committee on Intelligence and Education. The report was accepted and ordered placed on file.

Prof. E. A. A. Grange, of the Agricultural College, Lansing, and State Veterinarian, reported for the Committee on Diseases. He said epizootics were rare in the State for past year. In an official capacity he had been called to investigate twenty cases of glanders and ten cases of a variety of troubles, such as hog cholera and certain skin disorders.

Drs. J. Hawkins and J. A. Dell, members of the Committee on Diseases, also made short reports, in which paralysis, parturient apoplexy, tetanus, azoturia, and other diseases were discussed.

At this time Professor Grange introduced Mr. H. H. Hinds, President of the Live-stock Sanitary Commission, who made a few appropriate remarks and expressed his pleasure at being present.

Communications were read from Dr. E. W. Wells, Grand Rapids; Dr. H. C. Waun, Claireview; Dr. H. W. Rupright, Sturges; and Dr. W. Horace Hoskins, Philadelphia, Pa., President of the U. S. V. M. A. The same were, upon motion, received and ordered placed on file.

The meeting adjourned at 11.30 P.M. to meet at Dr. W. W. Thorburn's infirmary at 9 A.M., to witness the operations of laryngotomy, ovariectomy, and castration of a cryptorchid horse.

9 A.M., February 5th, all met at Dr. Thorburn's. The first operator was Dr. W. A. McLean, of Greenville, who operated on a cryptorchid horse. The doctor proved himself a very cool and expert surgeon in that line of work. The operation was completed very rapidly, was a complete success, and favorable comments were heard on all sides.

President Moody removed a fibroid tumor from a dog's eye, and performed ovariectomy on a bitch. The operations were done with neatness and dispatch, and added greatly to the entertainment of those present.

The subject upon which the operation of laryngotomy was to be demonstrated not being ready, it was decided to postpone the operation until 1 o'clock P.M., and in the meantime return to the hotel and hold a forenoon session, which was done, the President calling the meeting to order at 10.30. After roll-call the Committee on Legislation were asked for their report. The report consisted in the Chairman stating that the Committee had done nothing.

The communication from Dr. W. H. Hoskins, read at previous session, was ordered taken from table and re-read. The request contained therein, asking the Association to indorse the Army Bill and its actions, did not meet with favor for the reason that it appeared to discriminate in favor of graduates of United States colleges. If the words, of the United States, in Sec. 3, lines 3 and 4, were stricken out, the Society would have given its most hearty indorsement. It was, therefore, moved, supported, and carried that the Association do not indorse the bill in its present form.

The Secretary read a list of names of delinquent members, which was referred to the Executive Committee with orders to report at afternoon session.

Upon motion, the meeting adjourned for dinner and to meet at Dr. Thorburn's infirmary at 1 o'clock P.M., to witness the operation by Dr. S. Brenton, of Detroit, on a "roarer." At the appointed time all were present. The patient was cast, chloroform administered; when thoroughly under influence of the anæsthetic the patient was laid on its back with feet suspended toward the ceiling. All being in readiness, the operation was proceeded with, an incision about four inches in length being made through the integument, muscles, and trachea, exposing the larynx to view. The effect of the atrophied muscles on the left side of the larynx was beautifully demonstrated in this case. While the arytenoid cartilage on the left side remained stationary and immovable, the one on right side responded regularly to the muscular action during inspiration and expiration. It took some time for the large class present to pass around by the operator and view the

larynx one by one, but it was a sight worth seeing and possessed great interest for those present. The collapsed cartilage was then excised and the parts again examined by all present, after which we returned to the hotel and were called to order at 2.30. It being necessary for Dr. W. A. McLean to go home at this time, a vote of thanks was tendered him for his part in entertaining the members.

Dr. J. A. Dell read an interesting and carefully compiled paper entitled, "Some Observations on Conception and Pregnancy in the Mare." Dr. J. Black, of Richmond, read a communication describing a peculiar case occurring in his practice under the head, "Foreign Matter in Alimentary Canal." Prof. E. A. A. Grange entertained the Society with an "Extemporaneous Talk on Tuberculosis and Other Things." Dr. R. H. Kestell, of Ypsilanti, explained a mode of treatment for contracted feet which he recommended very highly. He termed it "Walling the Feet," and applied it in chronic laminitis and navicular arthritis. Professor Grange again took up the subject tuberculosis, and, besides reading a paper on this important question of the day, talked very entertainingly of his experience with the disease in its various phases. President Dr. G. C. Moody read a paper on "Wry Tail." Dr. C. M. Higginson, of Jackson, who was to read a paper entitled "The Veterinary Surgeon," sent telegram that he was unavoidably detained at home. Spirited discussions followed the reading of each paper, but discussion was necessarily limited for want of time.

The following officers were elected: President, Dr. W. W. Thorburn Lansing; First Vice-President, Dr. A. Campbell, Jackson; Second Vice-President, Dr. J. D. Rutherford, Detroit; Third Vice-President, Dr. Judson Black, Richmond; Secretary and Treasurer, Dr. William Jopling, Owosso. Directors: Dr. C. W. Stowe, Saginaw; Dr. B. C. McBeth, Battle Creek; Dr. J. A. Dell, Ann Arbor; Dr. H. F. Palmer, Napoleon; Dr. James Drury, Lansing; Dr. D. Cummings, Port Huron.

It was moved and supported that we have a full two days' meeting next year; carried.

A hearty vote of thanks was given our host and hostess for the kind treatment we had received from them. A vote of thanks was given Dr. S. Brenton, of Detroit, who added so much to the entertainment of the Association.

The newly elected President appointed the following committees: "Intelligence and Education," Drs. Hawkins, Cummings, and Gohn; "Diseases," Drs. Grange, Drury, and Dell; "Finance," Drs. G. W. Dunphy, W. McQueen, and Harrison; "Legislation," Drs. Rutherford, Giffen, and Moody.

Adjournment was then taken and all returned home, well pleased that they had attended the meeting which had proved to be the best ever held by this Society.

WILLIAM JOPLING,
Secretary.

NEW HAMPSHIRE VETERINARY MEDICAL ASSOCIATION.

The ninth meeting was held in the Eagle Hotel, Concord, on February 4th. The meeting was called to order at 11.30 A.M., by Dr. Russell. Minutes of

the previous meeting were then read and accepted. The following answered to the roll-call: Drs. Russell, Macguire, Abbott, Wilkinson, Lilico, and Pope.

Dr. Russell then followed by a short address concerning the usefulness of the Association, the necessity of attending its meetings, etc., and moved that the by-laws be changed relative to the time of meetings, making them quarterly instead of monthly. Seconded by Dr. Wilkinson, and carried unanimously. The Secretary was instructed by vote of the Association to read the communication from the Army Legislation Committee of the United States Veterinary Medical Association, including letter, bill proposed, and reasons why the veterinary service of the army should be improved. This subject being fully discussed, the Secretary was asked to send resolutions and copy of the bill to each and every member of Congress coming from New Hampshire. No further business to come before the meeting, Dr. Russell was called and read a very interesting paper on "Heredity," treating the subject from a human as well as an equine standpoint, their similarity rendering the subject very instructive. Discussion followed, showing many differences, and bringing out many interesting points.

Meeting adjourned at 1.30 P.M. until May. L. POPE, JR., M.D.V.,
Secretary.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THE regular meeting was called to order by President J. R. Hart, Tuesday evening, February 11, at 8.30. The members present were, Drs. H. P. Eves, W. H. Hoskins, John R. Hart, Charles Lintz, H. J. McClellan, J. T. McNulty, and W. L. Rhoads. The visitors were Drs. Thos. B. Rayner, F. S. Allen, J. O. George, J. McBirney, B. M. Underhill, and several students from the University Veterinary Department.

Dr. Hoskins spoke of the Army Bill, indorsed at the last meeting of the Association, and said though the committee appointed had done very little as a committee, they had, individually, been hard and earnestly working, going so far as to find just what interest was being manifested by the veterinarians in other States. He said, though the outlook was very favorable, he thought no veterinarian could consistently remain quiet and unheard from while this issue was in the balance, as this was undoubtedly the time to secure army legislation, and the Senate was the battle-ground, as the House was comparatively safe.

It was announced that the State Board of Veterinary Medical Examiners would meet in Philadelphia, for the purpose of examining applicants, the third Monday and Tuesday of April.

Dr. Eves gave a very interesting talk on the contagious and infectious diseases of Delaware. He also told what noble work the Department of Agriculture was doing down there. He also brought out many valuable points in the art of securing legislation, principal among which was the maintaining of farmers' institutes. They thus educate the people and do away with political legislation, which must have emoluments or perquisites as a motive-power. This is becoming essential for the masses. While trying to convince themselves that the veterinarian must be looking for a snap, they lose sight of the fact that in the last ten years they, in Delaware, have lost five to six hundred thousand dollars' worth of stock. This amount would have furnished a

complete sanitary police and have restabled all the cattle in the State under the most favorable circumstances. Among those diseases he mentioned tuberculosis, anthrax, hydrophobia, ringworm in cattle, tetanus, meningitis, hog cholera, œstrus bovis, contagious abortion. Of tuberculosis, he said, in 1100 cows tested about 200 were condemned, and the post-mortems held on 90 per cent. of them proved the diagnosis to be correct. The tuberculin used was manufactured by Prof. Chester, of the Delaware Station, and it was found equally good as Koch's. They take temperature for two days before injecting and one day after injecting, and have always found the disease where there was a reaction. The Delaware Act does not make the test compulsory, but leaves it optional with the owner.

Those cattle showing rise of 8-10 per cent., or less, are not condemned, but put aside; those showing rise of 1 per cent. to $1\frac{1}{2}$ per cent. are condemned. They believe the best way of eradicating it is by the Department making free tests and allowing only perfect animals to be bred. They have from 50 to 60 fatal cases of anthrax annually. This is found principally on the salt meadows, and is supposed to have been brought from Jersey, as tests prove the floodtide will bring débris from Jersey's infected district to this locality. They have inoculated about 850 cows, thus protecting them; have returned them to the infected pastures with a loss of but 2 head, six and eight weeks, respectively, after return, but have no cases this year, chargeable to vaccine. They use in each case 0.3 c.c. of virus of three grades: No. 1 kills white mice invariably and nothing else; No. 2 kills white mice and guinea-pigs in 60 per cent. of cases; No. 3 kills guinea-pigs invariably, but has never yet killed rabbits. Nos. 1 and 2 cause no disturbance whatever when injected into cows and calves; No. 3, in 12 to 15 instances in about 850 cases, caused marked œdema and loss of milk for twenty-four hours. They have had reports of death of 20 sheep near the affected district. The only law they have relating to anthrax is one forced through appropriating \$500 for burial purposes. They have tested 14 cases of glanders at Middletown with mallein without reaction. He reported mare having discharge from nostrils for three years, suddenly became worse; tested with mallein and gave reaction of 103, $\frac{10}{100}$. Her mate died of chronic peritonitis; showed cicatrices in the liver. The post-mortem in each case confirmed the diagnosis of glanders. Have had some mycotic enteritis which was supposed to be caused by feeding decaying turnips, as the trouble ceased when the feeding of the turnips was stopped, the other food being good. Yet other cattle (at the Station) fed on these turnips became quite fat.

The ringworm in cattle has been traced to the importation of York State calves, and if taken in time and treated with outward applications of tinct. iodi. gave little trouble. Tetanus is on the decrease; not nearly so prevalent as two years ago. The tetanin used is that of the Pasteur Institute. He also spoke of hog cholera, œstrus bovis, contagious abortion, which they treat successfully with hypodermic injections of carbolic acid.

Meningitis, within the last eight to ten years, has caused a loss of five to six thousand horses. They think this to be a chemical trouble caused by atmospheric changes, and suppose the death of the fungus causes ptomaines. Yet they have fed the supposed infectious food to young horses and have raised cultures of all fungous growths found on infected premises; have fed the pure cultures and have not been able to produce the disease.

They have no protective legislation covering hydrophobia. Have had 50 to 60 cases in cows traceable to dogs; 50 per cent. of these cases died.

Dr. McBirney exhibited two very interesting specimens, one being a section of pancreas from an ox. It consisted of a large duct filled with little white granules, most closely resembling homœopathic pills. This must contain 3 to 4 ounces of these granules. The other was a honeycomb piece of carbonate of lime, 2 by 1½ inches, taken from the brisket of an ox. Each of these animals were in good condition.

Drs. McAnulty and McClellan each reported cases of recovery in mules from cerebro-spinal meningitis. In the general discussion which followed these reports, Dr. Eves said he often found in this disease a great diversity of symptoms, many resembling influenza, some having putrid sore-throat; those having lost the power of deglutition, as a rule, have the highest temperature and the greatest congestion of the peritoneum. Dr. Hoskins thought the general sanitary surroundings affected the temperature and general condition. The most perfect surroundings being conducive to rise of temperature in early stages, while in poorer surroundings with a sub-normal temperature, the acute symptoms vary according to parts from which poison is being absorbed. Those cases which are colicky in the outset seldom lose the power of deglutition. Dr. McAnulty cited case of azoturia to which he had given aloes, then placed on tr. juniper, buchu, and potash for two weeks, had then used strychnine, quinine, and iron; the patient did well till exercised, when the incoördination of the hind parts returned. Patient continually constipated, pulse weak, temperature 101°. He is fat and will not sweat. Dr. Hoskins thinks condition similar to locomotor ataxia of man. Dr. Allen advocates the use of sulph. strych., given until development of tetanic symptoms; best given after feeding.

Dr. B. M. Underhill reported case of rabies¹ in sorrel gelding nine years old, used as family horse. First showed symptoms two days before; would not trot, but persisted in galloping; following day snapped at boy; became vicious and would snap and kick when any one passed before him. Before being destroyed he became very irritable, kept up a constant champing of the jaws, causing a frothy saliva to exude. He would at all times obey commands of the attendants. After his destruction the brain and portions of the spinal cord were removed and taken to the University for experimental purposes. No history of his having been bitten, but dog formerly in his stable supposed to have gone mad.

Dr. Eves said he had treated, with the Pasteur virus, a horse that had been bitten by a rabid dog severely enough to draw blood several times, and had good results. He says cows seldom become violent, though they may be excitable. Dr. McBirney spoke of two-year-old colt having rabies from bite of wolf. After a vote of thanks to those who had so ably entertained them the Society adjourned to meet March 10, 1896.

W. L. RHOADS,
Secretary.

THE OHIO STATE VETERINARY MEDICAL ASSOCIATION.

THE Secretary, Dr. W. H. Gribble, Washington C. H., on February 13, 1896, addressed the following circular to veterinarians in his State:

"At the last annual meeting it was voted to meet again during the com-

¹ See page 214.

ing summer in Columbus. Since that time it has been announced that the United States Association would meet in Buffalo, N. Y., on September 1st, 2d, and 3d, and your Secretary has received several letters asking if our meeting could not be postponed to the same place and time as the U. S. V. M. A. Every member of Ohio's Association is requested to write us giving his views in the matter. The Committee on Law, composed of Drs. W. H. Gribble, W. R. Howe, and J. D. Fair, on February 11, 1896, had D. R. Death arrested in Dayton, O., charged with illegally practising veterinary medicine and surgery. This is the first arrest under the law governing the practice of veterinary medicine in this State, and the defendant was fined ten dollars and costs, the minimum fine under the law."

PENNSYLVANIA STATE VETERINARY EXAMINING BOARD.

THE first stated meeting was held at the office of the Secretary, 3452 Ludlow Street, Philadelphia, on Monday, December 16, 1895. The President called the meeting to order at 11 A.M. Members present: Drs. Harger, Hoskins, and Walters. Absent: Drs. McNeil and Sallade, both of whom had forwarded their list of questions with instructions. The minutes of the initial meeting of the Board were read and approved.

The Secretary reported the correspondence relative to the cases of Drs. Kinnell and Hudson, stating that the former on investigation proved to be a graduate of the Ontario Veterinary College, legally registered in the State, and entitled to all the privileges of the several Acts. The complaint against Dr. Hudson was well substantiated, and it was quite evident that unless he ceased practising as a veterinary surgeon, it would be necessary for the Board to enter suit against him for violation of the several Acts under which the Board operated. The Secretary reported that he had investigated the grounds upon which the Prothonotary of Dauphin County had registered the said E. D. Hudson.

There being no candidates for examination, several questions came up before the Board as to the right of one legally registered in this State, removing to another State and returning to this State, as to whether his original registration would stand good or whether such a person would have to come before the Board. The matter was referred to Dr. Walters with instructions that he seek the Attorney-General's opinion upon this point.

The question of accepting the certificate of Dr. Hamilton, who had passed the State Veterinary Examining Board in Ohio, was considered, and on motion it was decided that we accept the certificate of that Board and grant him a license in this State on completion of the requirements relative to such applicants.

The By-laws were then presented as prepared by the sub-committee and taken up section by section, and were then adopted as a whole. A vote of thanks was tendered the Secretary for his labor in preparing the proposed rules.

It was moved and seconded that the meeting of the Board then adjourn to the third Monday in April, 1896, unless otherwise ordered.

S. J. J. HARGER,
President.

W. HORACE HOSKINS,
Secretary.

THE SCHUYLKILL VALLEY VETERINARY MEDICAL ASSOCIATION will hold their quarterly meeting at the Board of Health rooms, City Hall, Reading, Wednesday, March 18, 1896. Among other interesting papers and matters to come before the Association will be one on the "General Pathology of the Lymphatic System," by Dr. J. H. McCarthy; "Spavin," by Dr. M. L. Brackbill; "Mange," by Dr. U. S. G. Bieber.

THE PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION will have, among other interesting papers, "Remarks on the Use of Barium Chloride," by President Pearson; "The Pleasure of Being a Veterinarian," by Dr. J. Curtis Michener; "The Pathogenesis of Disease," by Dr. W. L. Rhoads. Dr. Allen will introduce the subject of "Azoturia" by reporting a second attack within five weeks, of the same horse, with recovery.

DR. JAMES A. WAUGH will enliven the programme of the coming meeting of the Pennsylvania State Association with a paper entitled "The American Veterinary Trade *versus* the Veterinary Profession."

AT YOUR LEISURE.

The Philadelphia *Times* of January 9th had an illustrated article descriptive of the Veterinary Department of the University of Pennsylvania. The illustrations of the hospital, dissecting-rooms, and operating sections were excellent, and, accompanied by an interesting history of the growth of the Department, made interesting reading.

The experiments at the Cornell Experiment Station, conducted upon two series of animals, to determine the value of fat, fed in the shape of tallow, for the purpose of increasing the butter-fat in the milk, proved only the fallacy of the theory and proposition as urged by others.

The February meeting of the Keystone Veterinary Medical Association was the most interesting and instructive local meeting held for many years in Philadelphia. The programme was contributed to by Drs. Eves, McNulty, McBirney, and Underhill.

The importance of the swine-breeding industry is attested by a sale of breeding-sows at Shenandoah, Iowa, when a single sow sold for \$505, and forty-six sows averaged \$90 each; worth more than horses.

The National Cat-Show will be held this year at Madison Square Garden, New York City, March 3 to 7, 1896.

Out of some three operations recently performed in the western part of Pennsylvania for roaring, but one proved beneficial.

Up to the date of June 30, 1894, thirty-one veterinarians underwent the civil-service examination for Assistant Meat-Inspectors in the Bureau of Animal Industry. Of this number three passed, but none were appointed. For the year ending June 30, 1895, ninety-four presented themselves for examination, thirty-five of whom passed, fourteen of whom have been appointed to positions at salaries ranging from \$1200 to \$1400 per year. The Chief of the Bureau of Animal Industry receives a salary of \$4000 per year.

An extract of *passiflora incarnata* (passion flowers) is strongly recommended for use in tetanus to control the spasms; preferably in connection with *cannabis indica*.

The graduation exercises of the New York College of Veterinary Surgeons will take place on April 1st, and will be an innovation on the long-established custom of having public exercises. The diplomas will be awarded in conjunction with a dinner given by the faculty, alumni, and graduating-class.

Professor R. S. Huidekoper has placed in the hands of his publisher the specimen pages of an illustrated and descriptive book on horseshoeing. The work promises to become a very complete and valuable contribution to the literature on this subject to the veterinarian, master horseshoer, breeders, and owners of valuable horses.

The closing exercises of the American Veterinary College will take place March 28, 1896. The alumni meeting will be held at 2.30 P.M. on the afternoon of commencement day at the College Hall; the closing exercises at Chickering Hall in the evening.

Dehorning of cattle in Salem County, N. J., has become very popular, and ere long most herds will be freed from these weapons of offense and defense.

Virginia possesses to-day one of the most active and aggressive veterinary associations in our land. Their meetings are well attended and the programme is always loaded down with a grand intellectual feast. She is knocking at the door of the State Legislature for better safeguards to those coming to the

State properly equipped to practise veterinary science, and her people will do well to grant her reasonable demands, which after all contribute more to the benefit of her people than can possibly accrue to the veterinarians.

The bill introduced in Congress by Senator Sherman looking to an increase of the service to twelve companies to a regiment, so that each regiment may consist of three battalions of four companies to each battalion, provides for the appointment of veterinarians to cavalry and artillery, which will increase the number of veterinarians now required.

The annual holiday edition of the *Alameda Argus*, of Alameda, Cal., gives an interesting account of the milk-inspection departments of the Board of Health. The earliest investigation in the State of bovine tuberculosis with tuberculin has been made. By this Board of Health, under the direct supervision of T. Carpenter, veterinary inspector, all milk-producers and vendors for the city are required to take out licenses.

The death of Lieutenant M. H. Doe, of the Police Department of Lynn, Mass., after an unsuccessful trial of electricity to the extent of 5000 volts, gives little promise of the value of this remedy in this much-dreaded disease.

Ohio and Illinois have laws that limit the sale of all drugs and medicines to pharmacists, and hold the latter individually responsible for the purity and standard strength of everything they sell.

NEW PUBLICATIONS.

THE VETERINARY HERALD, a students' journal, makes its initial bow to the student fraternity with the January issue. It is edited and published by the students of the Chicago Veterinary College and is the first publication of its kind in this country. While its field is necessarily limited, it has great opportunities to do much good, and we wish for it a successful career.

The report of the Massachusetts Cattle Commission in book form has reached us and sheds a deal of light upon the subject of tuberculosis in all its aspects, and will prove a valuable book of reference for all interested in the subject, as well as a valuable guide for all those who contemplate legislation, State or local, designed to deal with this now all-important question.

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No. 4.

MILK AS A FACTOR IN THE CAUSATION OF DISEASE.

BY JOHN M. PARKER, D.V.S.,
HAVERHILL, MASS.

IN considering this subject I shall not attempt to do more than skim the surface. The subject is so large that I have been unable to do more than touch on some of the more important parts. There are several points of great interest closely connected with this subject, such as the influence of food-stuffs on the healthfulness of milk, that I have not touched upon, and which I hope to be able to take up at some future time.

Milk is the natural food for infants. In a perfect state it is the most perfect food we know, and, of course, it follows that it is of the utmost importance that it be procured and placed on the market in as perfect a condition as possible. And here the study of bacteriology has been of the utmost importance to the dairy-farmer. Housewives used to dread the thunder-storm because the condition of the atmosphere was supposed to exert a peculiar influence on milk, causing it to sour. The study of bacteriology has shown the fallacy of this theory. The warm weather preceding the storm favors the development of germ-life, which finds its way into the milk, causing it to sour and curdle. To prevent this from taking place, and to keep milk pure and sweet, it is only necessary to prevent the entrance or development of the various forms of bacteria; if this is done milk will keep almost indefinitely. Practically, however, it is almost impossible to keep milk perfectly free from germ-life, but with a little care the number can be greatly reduced.

As a rule the greatest number of bacteria find their way into

milk during milking. The milker usually rests his head on the cow's flank immediately above the pail, and of necessity dirt and scurf and hairs from the cow find their way into the milk. The cow has possibly been standing in a mud-hole in the pasture, and the udder, body, flank, and tail are probably covered with dirt and filth and decaying animal and vegetable matter, and, of course, the spores and germs from the grasses, marshes, and stagnant water are brushed and shaken off during milking and drop into the milk. One has only to take a casual glance at the strainer after the milk has passed through to see straws and hairs and scales from sore teats or udders, along with feces and dirt and filth of all kinds, all of which are teeming with germ-life, and he will realize what necessity there is for a change of method to keep pace with our increased knowledge on the subject.

Contamination, however, does not only come from the cow, but the milker's hands and clothing, as well as pails, strainers, receptacles for holding and cooling milk, milk-jars, and skimmers. All should be sterilized. It is not sufficient to rinse out a pail with warm water. Pails should be washed with soda solution and then with boiling water, and if there are any seams in the pail these should be scrubbed with a brush (all seams in the pail, without exception, should be soldered, otherwise the seam itself will be a receptacle for micro-organisms). Milkers' hands should be thoroughly washed with soap and warm water, and, instead of any dirty clothes being used for milking, clean overalls should invariably be used. The udder should also be thoroughly washed before milking. In this way the micro-organisms that are not washed off will adhere to the damp surface, and will not be so likely to fall off into the milk. Cows should also be groomed and curried each day as thoroughly as a horse. These are no idle fancies, but are well-established facts, well illustrated by several investigators, notably by Dr. P. H. Bryce, of Ontario. In Dr. Bryce's experiments, gelatin-plate cultures were poured, $\frac{1}{2}$ c.c. of milk being added for each culture. In *three days*, at a temperature of 66.70° F., the various plates gave the following results:

Plate I. Direct from the cow; no precaution except that the milk was received into sterilized test-tubes; 15 micro-organisms per c.c.

Plate II. Pail in stable receiving milk from different cows; milk strained through a cloth; 720 micro-organisms per c.c.

Plate III. Milk from cooling apparatus after cooling ; 884 micro-organisms per c.c.

Plate IV. Milk from bottles immediately after filling ; 1640 micro-organisms per c.c.

These experiments plainly show the greatest source of contamination. In the first plate, milking directly into a test-tube, after three days at a temperature of 66.70° F., there were only 15 micro-organisms per c.c. This milk came directly from the cow into a sterilized test-tube, and, of course, there was no outside contamination. In the next plate there were 720 germs in each c.c. after being milked into a pail and strained through a cloth. After cooling there were 884, and after filling into bottles there were 1640. As the milk came into contact with more surface the numbers increased rapidly, and this, remember, on a farm where the milk was handled with unusual care as regards cleanliness.

Experiments conducted by Dr. Peters show another occasional source of contamination, especially in cows after standing in stagnant water or lying on dirty floors. These experiments were carried out under careful antiseptic precautions. Clean suits were put on ; the cows' udders, teats, flanks, sides, groins, and abdomen were washed with bichloride solution ; they were milked into sterile bottles, four cows being used in the experiments.

Table marked I represents milk in first half of milking and drawn by hand directly into sterile bottles.

No. II. represents milk drawn through sterile canula into bottle.

Nos. III. and IV. represent milk drawn by hand after more than half the udder had been emptied.

The columns marked A, B, C, D, represent the milk from the four cows, the figures showing the number of colonies of bacteria in each plate :

	A.	B.	C.	D.
I.	141	167	19	53
II.	0	0	1	2
III.	0	6	0	0
IV.	0	0	1	2

It will be noticed that in the first milk drawn from each cow there were a number of colonies of bacteria, while the later portion of the milking was practically free from bacteria, the milk being drawn into sterile bottles.

It would seem, then, that as a matter of practical importance it would be well to strip the teat once or twice before milking into a sterilized pail. In this way the micro-organisms which evidently find their way into the milk-duct would be washed out. It also emphasizes the importance of cleanly surroundings for cattle, for we find that the cows referred to in Bryce's experiments were handled with unusual care as regards cleanliness, with the evident result that the first of the milk was not contaminated, as in Dr. Peters's experiments.

Not only should the greatest care be exercised as to cleanliness, however, but, after aerating the milk to rid it of bad odors, it should be rapidly cooled to about 41° F., the cooling of milk preventing or retarding the growth of the various micro-organisms contained in the milk. To again quote from Dr. Bryce: "Milk that had been kept in a cool place, and then showed 10,000 micro-organisms per c.c., was afterward allowed to stand in a warm room some six hours, and during this time the bacteria increased from 10,000 to 1,000,000 per c.c."

Experiments by Feer showed the same results: "In examining, a few hours after milking, milk that had been supplied to a children's hospital, he found in winter 50 to 70,000 bacteria per c.c. In summer, under the same conditions, they averaged 300,000, and after standing a few hours at ordinary temperature they multiplied to 14,000,000." (*Annual of Medical Sciences.*)

These experiments show the importance of cleanliness and of keeping the milk at a low temperature, not only at the dairy-farm, but after delivery to the customer. Many a farmer gets blamed for delivering impure or sour milk, when no one is at fault but the ignorant or careless housekeepers. Want of knowledge or want of appreciation of the importance of absolute cleanliness in the care of milk is perhaps one of the greatest, though unrealized, difficulties that health authorities will have to contend against.

Of all infantile disorders cholera infantum, or milk-diarrhœa, is by far the most fatal, and thousands of children die every summer from this cause alone. In referring to milk-diarrhœa, Keating says: "Its character and type are modified by three important factors: 1, climate or season; 2, social condition; 3, food. It is not now the belief that heat *per se* causes diarrhœa. It is only a powerful, indirect factor, lowering the vitality of the patient and favoring fermentative changes in the milk.

It is to the feeding-bottle and its contents that attention must be specially directed in the prevention of autumnal diarrhœa."

It only occurs in hot weather. A temperature of 60° F. or over favors the development and multiplication of the various micro-organisms that are the prime cause of this disease. There is no specific micro-organism present, but the presence of all toxicogenic bacteria (or bacteria that give off poisonous gases) in milk or food of any kind must be avoided. Infants fed exclusively on sterile foods are not liable to be attacked, and various methods have been tried to prevent the development of these organisms in milk. The principal of these are the Pasteurization and the sterilization of milk, and in European countries and in the West these methods are adopted quite extensively.

The Pasteurization of milk consists in the placing of milk in sterile bottles or jars and exposing them to a temperature of from 150° F. to 180° F. Milk treated in this way, cooled to 41° F., and kept at a temperature below 60° F. will keep sweet and pure for several days, and "sweet milk may be heated to 180° F. without any coagulation or burning or any material change taking place." (*Year-Book, Department of Agriculture, 1895.*) To Pasteurize milk with the best results, however, milk must be fresh. It should be perfectly pure, and as free as possible from bacteria. Where there are any great number of micro-organisms present, and where there is the least tendency to sour, even when so slight as not to be perceptible to taste, the heat will coagulate the albumin, rendering it more or less indigestible.

All germs are not destroyed at 180° F., however, and some even multiply at that temperature. To totally destroy all germs sterilizing at a temperature of 230° F. is required. On the other hand, that amount of heat would cause a coagulation of casein, and would injure the taste and appearance of the milk, but all germs and spores can be destroyed by interrupted heating, *i. e.*, by submitting the milk to a temperature of 180° F. and cooling, repeating the process for five or six consecutive days. The rapid change of temperature from hot to cold favors the keeping qualities of the milk by either killing the bacteria or lessening their vitality so that a long time is required before they can begin to multiply. (*Year-Book, Department of Agriculture, 1896.*)

It must be remembered, however, that the Pasteurization or sterilization of milk is not of itself an advantage to milk. It is

undertaken simply for the purpose of destroying the activity of that which is foreign to milk and which finds its way into milk either during or after milking. Milk from healthy cows is of itself absolutely pure, and but for the entrance of foreign organisms would keep indefinitely. It follows, then, that an effort should be made to prevent the entrance of these foreign matters. Much can be done in this way, and for their own protection dairymen ought to do as much as possible and go as far as practicable in this direction.

(To be concluded in the May number.)

OSTEOPOROSIS.¹

BY GEORGE C. FAVILLE, D.V.M.,
NORFOLK, VA.

THE term osteoporosis, it seems to me, is more or less a misnomer. Indicating as it does a porous condition of bone fails to convey any accurate idea of the pathological condition found in this disease. There is upon the part of many writers a tendency to confound the disease which we commonly speak of as osteoporosis with other diseases which may result in a porous condition of the bone. For instance, the mycelium threads of actinomyces, as they affect the maxillary bones of cattle, produce a condition which might quite readily be, and probably quite often is, mistaken for osteoporosis, when the microscope would demonstrate at once the true nature of the disease.

I am well aware that I shall open a wide field for discussion by the position that I shall take; but discussion is what we want, and the aim of my paper is to form a groundwork for intelligent controversy. I think that there has been a great deal of unnecessary hairsplitting in separating this diseased condition from those other similar, and to my mind, identical diseases, osteomalacia and rhachitis. I am of the opinion that it would be much nearer accurate nomenclature to use the term rhachitis to cover all the other forms constituting the so-called diseases osteoporosis, osteomalacia, rickets, etc. The most of the literature upon this subject we find in works upon human pathology, and this is unfortunate from the fact that the human subject does not offer the field for careful pathological study that

¹ Read before the Virginia State Veterinary Medical Association, January 2, 1896.

is offered when the subjects are from some of the lower orders. A multiplicity of names tends to confuse, and it seems to me that the writings of most of our authors are confused by this very cause. I think that we are warranted in assuming that the rickets of the dog or pig and the osteoporosis of the horse are nearly enough alike in their pathology and etiology to be, *generically* at least, classed together, under the term rhachitis. Prof. W. L. Williams, in a discussion of this subject in a paper read by him before the U. S. V. M. A., held in Washington, in September, 1891, discussed this subject in a masterly manner, and I can do no better than to commend his paper to your careful consideration.

Among the writers upon human medicine it seems to be pretty well agreed that rickets is a persistence of the soft condition of the bones of the young animal, owing to a failure in the process of calcification, while osteomalacia is more a condition of age, and results in a resoftening of the bones by a process of decalcification. Among the various descriptions of osteoporosis we find one writer describing a condition which has been described by someone else under the term rickets, and another describes as the same disease those symptoms which by someone else are described as osteomalacia. We must have something else than age upon which to base a classification. The pathological conditions noted in this disease do not, it seems to me, give sufficient grounds upon which to differentiate. Billroth in his *Surgical Pathology*, in writing of predisposing causes of fractures, writes of rickets, "which is due to deficient deposit of lime-salts in the bone." Again, of rhachitis and osteomalacia, he emphasizes the point that rhachitis is a disease peculiar to childhood, and from his description of rhachitis and osteomalacia leads one to think that this differentiation is based rather upon the age of the subject than upon the differences in pathological condition. Williams, in his *Principles of Veterinary Surgery*, classes osteoporosis as a non-inflammatory disease of bone. If he means by that a disease of bone with no symptoms of inflammation present, I do not think his classification will hold. His definition of inflammation is "a perverted nutrition of a living part, the effect of irritation or injury." Taking this definition as correct and comprehensive, the classification would perhaps hold, but it is certain that we find present in this disease those symptoms found where there is inflammation. Heat, generally with redness, pain, and swell-

ing are always met with. It would be more nearly correct to consider this disease inflammatory, the effect of a perverted nutrition.

The etiology of osteoporosis is a question of much dispute. There can be no doubt that some fault in the hygienic surroundings is the predisposing cause. Just what that fault is it is difficult to determine. We find the disease affecting young and aged animals; in horses and colts that are running on pasture with no apparent fault in the hygienic conditions, and again in stables supposed to have been constructed according to the most modern rules of sanitary science. It seems to me that there is often a constitutional diathesis, not necessarily hereditary, which predisposes to rhachitic troubles. Many times, without doubt, we must look to the unsanitary construction of stables for the predisposing cause, especially in those extensive outbreaks which appear at times in some portions of the country in an enzoötic form. But from the fact that the disease appears in horses that are not stabled or worked, that run upon pastures or the open prairie of the West, particularly some portions of the Mississippi Valley, we cannot conclude that the unsanitary construction of stables is the only predisposing cause.

I can do no better in discussing the symptomatology of this disease than to describe the course of a case which recently came under my care, a bay filly, one year old, standard bred. I knew this colt during her whole life. She was kept upon the place where she was foaled until she died. The place where she was raised is a small dairy-farm within the city limits. The drainage is exceptionally good, the farm being nearly surrounded by tide-water, and lying on a high knoll above high water. There are seven or eight horses kept on the place, and all are fed and watered from the same bins and wells. The stabling is comfortable. This filly, as is a full sister one year older, was always kept in an outside box-stall, with dry floor and windows opening directly outside. During the summer she was always out during day and night when the weather was good, on good clover pasture, with grain feed twice a day. On the 3d day of last April she was led to a blacksmith-shop near my office to have her feet trimmed. She was a little restless and would pull way from the blacksmith when he began to rasp the foot. Upon giving a sudden pull she completely dislocated the left scapulo-humeral joint. I was standing near

watching the blacksmith at his work, and knew that the pull she made was a slight one, he not attempting to hold her. I at once reduced the dislocation, and with surprising ease, and in about two weeks she was as well as ever. About the last of May my attention was called to this filly again. She had not been doing well, and, while eating as well as the other stock, was not thrifty. I found a slight glairy discharge from both nostrils. The bones of the whole facial region seemed to be thickened, and there was marked dyspnœa, evidently from the thickened turbinated bones. At this time there was no lameness. In about a week the discharge from the nose had increased, and respiration had become more difficult, and I found her decidedly lame in the right foreleg. The next day she was lame in both forelimbs. In two or three days she was lame in the hind-legs, the difficulty in front having left her. The swelling of the facial bones kept increasing until respiration became fearfully painful. Her food could be but imperfectly masticated. The teeth seemed sore, although the gums showed no inflammation.

About the middle of June she died, and I made a post-mortem examination. The only lesions I could find were in the osseous system. The superior maxillary, nasal, and turbinated bones were greatly thickened. The periosteum was easily separated, and the whole bone was soft and spongy; I could readily press a small scalpel into the substance of the bone at any point. I made an attempt to clean them by boiling. I found them so soft that I could keep them in no way except in alcohol. They seemed to have completely lost their osseous character. I found the long bones at their extremities showed the same condition to a greater or less extent. This case in its symptoms and developments was typical of the disease as I have seen it. I carefully studied the condition under which this colt was kept. The food was of the best, good hay and grass, with a daily run at pasture during good weather, and dry, well-ventilated stabling at night and during bad weather. Every attention was given her in the hopes of producing a speedy mare. I can account for this case in no way except by assuming that there was some fault with the process of assimilation. Evidently all the necessary elements for bone-formation were present in the food. Other colts of the same age, kept under the same conditions and fed in the same way, are thrifty and developing nicely. The digestive functions seem to be perfectly

performed. There certainly, in this case, was not, in fact I have never known of a case where there was, anything to indicate a hereditary diathesis. Undoubtedly the materials necessary for complete bone-formation were present and in proper proportion for assimilation, but either are not assimilated or by some occult action after assimilation are reabsorbed.

In order to get the various views of our members, I prepared a series of questions regarding this diseases which I sent to each member. Several replied that they had never seen cases of this disease in their practise in this State. The questions asked were as follows:

1st. To what extent have you observed osteoporosis in this State?

2d. What proportion of cases have been aged and what young animals?

3d. Were the animals stabled? If so, please give details as to ventilation, drainage, dampness, character of food and water. If on pasture, please state character of pasture, whether dry or marshy, and kind of grass and water.

4th. At what age have you generally seen the disease, and in your opinion what is the cause of the disease in the cases you have seen?

5th. What line of treatment do you find best?

6th. What percentage of recoveries?

7th. The uncertainty of our knowledge regarding this disease makes it more than interesting. Kindly send such information as you may have upon the peculiarities of its appearance in your locality?

(To be concluded in the May number.)

BONE-SOFTENING.¹

BY M. D. HOGE, JR., M.D.,
RICHMOND, VA.

As the diseases osteoporosis and osteomalacia in animals are among the most obscure, and our Society having entered upon their investigation, I have thought that a short review of kindred diseases as observed in man might from analogy give us some possible insight into the cause of these mysterious troubles.

¹ A paper read before the Virginia State Veterinary Medical Association, January 2, 1896.

Rhachitis, or rickets, was first accurately described by an Englishman, Glisson, in 1650. It first made its appearance in England about the beginning of the seventeenth century, and even to this day it is called by the Germans *die Englische Krankheit*, "the English disease."

The true and real cause is at present unknown, in spite of the great number of careful observations and painstaking investigations. It is, however, certain that its development is promoted by defective nourishment, unsanitary surroundings, as damp, crowded quarters in large cities, and in artificially fed children.

It has been found possible to produce the disease, or certain similar changes, in the bones of young animals by giving foods as free from lime as possible, and by the administration of large doses of lactic acid or small quantities of phosphorus. The changes thus produced bear an analogy to rhachitis, or rather to bone-softening. Still the specific etiological factor is wanting.

Some authorities contend that the disease bears some relation to syphilis; others that it is either a peculiar form of malacia, or the results of the same. It generally appears in children from two to three years of age, among the wealthy as well as the poor, and sex has no influence on its occurrence.

Rhachitis is a disturbance of the normal process connected with the growth of bone. It is not that they *become* soft, but they remain soft, *i.e.*, not ossified. We know that all the bony structures of the foetus, except the vault of the cranium, are mapped out in hyaline cartilage. Pathologically, we find the periosteum much reddened and congested. In tearing off the periosteum small pieces of the unossified tissue adhere to it. In normal (long) bones, at the epiphyses, the proliferative layer or hyperplastic zone is sharply and distinctly separated from the osseous layer or zone of calcification. In rhachitic bone the sharp boundaries are replaced by an irregular serrated edge. The proliferation of the cartilage cells has increased beyond all bounds, and the cartilage matrix has become fibrous. There is also an extremely active new growth of bloodvessels. The periosteum shows changes also; the inner or osteoblastic layer is thickened, and the newly formed bone does not become completely calcified, but remains soft and spongy. Hence we have swelling of the epiphyses of the long bones and thickening of the flat bones, especially those of the skull.

Normal dry bone contains about 63 per cent. of lime; rhachitic bones have only 20 per cent. to 30 per cent. Experi-

mental proof on animals shows us that when the lime-salts are withdrawn from the food of ewes the lambs suffer from rhachitis. In zoölogical gardens, young lions and leopards also have rhachitis when the bones are first cut off from the fresh meats fed to them.

To state the views again as to the causes of rhachitis, most authors maintain that it is a disturbance of nutrition in which the lime-salts are deficient. Kassowitz seeks to explain the cause by a pathologically increased vascularization of the osteogenetic tissue, in which the bloodvessels are especially vulnerable by reason of deficient nutrition and toxic substances in the circulation.

In other cases the lime-salts are in abundance, but, owing to a catarrhal condition of the intestines, they are not absorbed, hence do not reach the osseous tissue. According to Salkowski and Seemann, lime-salts in *excess* have a similar effect, in that phosphate of lime combines with the chlorine of the blood, thereby producing a deficiency of chlorides. The result of this is a deficiency of hydrochloric acid in the stomach, and by this means the solubility and absorption of lime-salts are made impossible.

We may still conceive that there exists, undiscovered as yet, in the blood a toxin which has the power of exciting in the bones the previously described methods of abnormal growth, osteomalacia.

As a rule osteomalacia does not, like rhachitis, consist of a disturbance in development of bone, but the bones, having already undergone normal development and hardness, afterward become soft. Its true etiological factor has as yet not been ascertained. It is especially frequent along the Rhine, in Westphalia, Flanders, and Northern Italy. This might point to some local infection in these localities which is yet undiscovered.

Among the exciting causes child-bearing is the most important, for the disease usually dates from pregnancy. Another factor which may be mentioned is unhygienic surroundings. The pathological process consists in a disappearance of the earthy salts of the bones, which begins usually from the medulla and extends outward. The marrow is at first extremely hyperæmic and extravasations of blood are frequently found. The bony structure surrounding the Haversian canals becomes converted into a soft fibrous tissue, the central cavity grows larger and larger, and the cortical substance becomes as thin as paper.

At this stage the hyperæmia disappears and the marrow acquires a yellow color, which may be entirely transformed into a yellow viscid fluid. The bones can now be easily cut with a knife; they possess a low specific gravity. The periosteum is at first thickened and hyperæmic, and when it is removed the underlying surface of the bone is found rough and uneven.

Chemically there is a large deficiency of lime-salts, and lactic acid is found in the bones. The general condition of the patient, except for intense pain, remains good for a long time; the appetite is good and the internal organs perform their functions in a normal manner.

The excretion of phosphates in the urine is increased; lactic acid has been found. Concretions of lime are met with in the bladder and kidneys.

HEREDITY.¹

BY W. T. RUSSELL, V.S.,
NASHUA, N. H.

I HAVE chosen for my subject the laws that govern heredity, and as they are constantly being brought to our notice in everyday life, the amount of debatable pabulum which the subject offers may, therefore, render it worthy as a subject for debate by this society. Before commencing I would disclaim the idea of putting forward anything new or original, and, further, would beg your indulgence for the shortcomings of a paper too hastily prepared. In treating the subject and in seeking analogies I have repeatedly gone to the human subject. With such increased opportunity for collecting statistics as man offers and the positive evidence which such at times affords, you will perhaps admit that this is allowable.

"Like begets like." At the outset I admit that I am a believer in this law to the bitter end. Its force is apparent in all forms of life constantly and everywhere. Both internally and externally do we find this, for not only features and conformation are reproduced, but bones and internal and circulatory organs are equally under its mighty domain. Practically, of course, this law is not exact, for, as Darwin puts it, "The number and diversity of inheritable deviations of structure, both

¹ Read before the New Hampshire Veterinary Medical Association, February 4, 1896.

those of slight and those of considerable physiological importance, are endless." Yet the law itself stands unchangeable. Of course, heredity has its opponents, but to ourselves naturally at once the art of breeding suggests itself as an argument of convincing weight in its favor.

Among men, heredity is to be noticed especially in nervous systems. Galton mentions that intellect and great ability are largely hereditary qualities. Musical attributes are common to families. Even trifling peculiarities are sometimes inherited; that of handwriting has often been observed.

The laws of heredity are generally summarized as four, viz.: Direct heredity, reversional heredity, indirect or collateral heredity, and the heredity of influence.

First we have direct heredity. This consists in the transmission of qualities supplied by both parents. This is obviously shown by the fusion of the characters of the parents, as exhibited by hybrids being distinct species, or strongly marked varieties among the lower animals, or as the offspring of parents belonging to two strongly contrasted races of men, such as white on the one hand and negro on the other. From a purely theoretical point of view, this law of direct heredity would be the common one, and, as described by Lucas, "It would consist in the absolute equilibrium of the moral and physical nature of the infant, of the integral resemblances of the two parents, or would equal the exact mean of the parents." As a fact, this rarely happens, the rule being that the influence of one or the other parent prevails in the offspring, and in this regard the tendency to cross-heredity, *i.e.*, from father to daughter or mother to son, appears to be the most frequent. Dr. Carpenter says: "It has long been a prevalent idea that certain parts of the organism of the offspring are derived from the male and certain other parts from the female parent; and although no universal rule can be laid down on this point, yet the observations that have been made by practical breeders seem to establish that this tendency has a real existence, the characters of the animal portion of the feline being especially (but not exclusively) derived from the male parent, and those of the organic apparatus being in like manner derived from the female parent. The former will be chiefly manifested in the external appearance, in the configuration of the head and limbs in the organs of the senses and in the locomotive apparatus; whilst the latter show themselves in the sizes of the body (which is primarily deter-

mined by the viscera contained in the trunk) and in the mode in which the vital functions are performed. But, however, general this rule may prove as regards the lower animals, it is by no means universal; for instances are far from infrequent in which the multiple progeny of one conception divide between them the characters of the parents in very different modes. Some litters of cross-bred pups are apt illustrations of this. It is rare to meet with instances in which some distinctive traits of both parents may not be traced in the offspring, these traits showing themselves in peculiarities of manner of gesture, in tendencies of thought or feeling, and in proneness to constitutional disorders. Let me offer as confirmatory evidence on this point the case of Leslie Geoffrey, an engineer in Mauritius, son of a white man and a stupid negress. Physically he was a negro, with the features and woolly hair of his mother's race, but in moral constitution he was so thoroughly white, as regarded intellectual development, that he was able to overcome the prejudice against him as a negro and attained the highest office in the island. Another fact that I would submit is that any peculiarity possessed in common by both parents is almost with certainty transmitted to the offspring. Equally certain is this rule in the case of disease-diatheses possessed by both parents; and Carpenter says, "The manifestation of it is likely to be yet more marked if the parents inherit the same tendencies."

Next we come to reversional heredity, wherein the offspring inherits the peculiarities of its grandparent or even more remote ancestor. Side by side with this we may take collateral or indirect heredity, which occurs between two persons and their ancestors in an indirect line, as between uncle and nephew, aunt and niece. Reversion is so common among animals that the term "throwing back" is of daily occurrence. In this connection prepotency is often to be observed, one individual being especially powerful in transmitting his character through several generations. The laws which govern these variations are for the most part unknown. Darwin says: "No one can tell why the same peculiarity in different individuals of the same species, or in different species, is sometimes inherited and sometimes not so; why the child of ten reverts in certain characters to its grandfather or grandmother or more remote ancestor; why a peculiarity is often transmitted from one sex to both sexes or to one sex alone, more commonly but not exclusively to the like sex. It is a fact of some importance to us that peculiarities

appearing in the males of our domestic animals are often transmitted exclusively, or in a much greater degree, to the males alone. A much more important rule which I think may be trusted is that, at whatever period of life a peculiarity first appears, it tends to reappear in the offspring at a corresponding age, though sometimes earlier. Hereditary diseases and some other facts make me believe that the rule has a wider extension, and that there is no apparent reason why a peculiarity should appear at a certain age. Yet, that it does tend to appear in the offspring at the same period at which it first appeared in the parent is an accepted fact.

Then, lastly, we have the heredity of influence, a form which offers many familiar examples and always affords interesting study. The phenomena in connection with it show that when a mother has previously borne offspring the influence of the father may be impressed on her progeny afterward begotten by a different parent. The well-known instance of a mare which having been impregnated by a zebra eventually transmitted zebra-marks to a succession of horse-begotten colts will readily occur to you. In the human family this is also true, as when a widow marrying a second time bears children with a strong resemblance to her first husband. A striking case is recorded of a negress whose first offspring was the child of a white man and ever afterward she bore half-caste children, although by a negro.

Perhaps, of all men, dog-breeders are as fully alive to the heredity of influence as any. The jealousy with which they guard the females previous to their first impregnation is a noteworthy tribute to the theory which it implies. It is the habit to attribute those cases to the mental impression produced by the first male parent upon the female, but a theory is also advanced which suggests that the blood of the female has imbibed from that of the fetus, through the placental circulation, some of the attributes which the latter has derived from its male parent, and that the female may communicate these, with those proper to herself, to the subsequent offspring of a different male parentage.

We next have to consider some of the modifications of the foregoing laws as brought about by various influences, conditions, and surroundings for which domestication is solely responsible, for were there no domestication there might possibly have been no exception to heredity. Non-inheritance might

be explained by the fact that strong hereditary tendencies, although existing, are overborne by unfavorable conditions of life; for instance, cart-horses will not transmit their fine size and great strength if living in cold, damp, or mountainous regions, and sheep in our tropical climates lose their wool in a few generations. Under this head, let me again quote Darwin, who says: "Under domestication we see much variability caused or at least excited by changed conditions of life, but often in so obscure a manner that we are tempted to consider the variations as spontaneous. Variability is governed by many complex laws, by correlated growth, compensation, the increased use and disuse of parts, and the definite action of surrounding conditions. As long as the conditions of life remain the same, we have reason to believe that a modification which has already been inherited for many generations may continue to be inherited for many generations to come. On the other hand, we have evidence that variability, where it has once come into play, does not cease under domestication for a very long period, nor do we know that it ever ceases, for new varieties are still occasionally produced by our oldest domesticated productions."

Before concluding this portion of my subject I cannot help referring to one other point. The fact that heredity is especially observable in nervous systems has already been referred to. Some of the deepest thinkers, in following up the subject with its connection with the evolution of the mind, gauge man's moral responsibility entirely by hereditary influences transmitted to him, and then apply the doctrine in consideration of the very complex question "freedom of will." In an extremely clever paper in the *Medical Service Monthly*, by Dr. Badran, to which I am indebted for some valuable notes, I find "The wicked are not wicked by deliberate choice of the advantages and pleasure of wickedness, but they are so in consequence of a warped inclination of their nature, which makes the evil seem good and the good seem evil." Criminals then are quite a manufactured article. There are no accidents in the laws of the universe; there is nothing accidental or supernatural in the impulse to do wrong. Both come by inheritance or education, or probably by a combination of the two. Science cannot believe that the impulses to do right are purely due to the grace of heaven and the impulses to do wrong to the malice of the evil one.

(To be concluded in the May number.)

A NON-CLASSIFIED DISEASE AFFECTING RANGE-HORSES IN MONTANA.

BY ROBERT H. BIRD, M.R.C.V.S.,
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THE perusal of an article in the February number of the JOURNAL by State Veterinarian Scott, of Wisconsin, under the heading "Golden-rod Killing Horses," will serve as a basis for a few brief remarks on the subject of a disease met with in Montana among horses, and which bears a striking similarity in its pathological characteristics to that described by the above-named gentleman.

For several years a disease has been known to affect horses grazing on the ranges or unenclosed native pasture-tracts of Montana. These ranges are situated at an altitude averaging anywhere from 3000 to 4000 feet above sea-level. In the main chain of the Rocky Mountains and its numerous spurs these ranges may be heavily timbered, but on the large plains or bench-lands stretching in an easterly direction timber may be entirely wanting. The botanical features of the plants and grasses growing in these regions are presumably similar to the flora found in other sections of the Rocky Mountain country at a like altitude. The native or bunch-grass, though not so common as in former years, still grows abundantly in many parts, and is exceedingly nutritious. Multitudinous plant-life also flourishes, and to some of these plants poisonous properties are popularly attributed. The golden-rod, while not so abundant as in States further east, can be found, I understand, more or less generally over the State; but on the ranges its growth is limited, and it certainly is not conspicuous. No suspicion has yet been directed to the golden-rod as the causative agent of the malady to be referred to. I observe that the *United States Dispensatory* refers to the varieties of *Solidago*, or golden-rod, found on this continent, and mentions its medicinal virtues as "aromatic, stimulant, and carminative;" but no mention is made of any properties inimical to animal life, which is the subject of this article.

The disease prevails to a greater extent during some seasons than others. It has occasionally assumed the dimensions of an epizootic. It begins to make its appearance generally in the

early autumn, and is more markedly frequent after a hot, dry summer, succeeded by fall rains. While certain sections of the country are regularly visited by the disease, still it is liable to miss one or more seasons, and it has frequently been noted that while horses accustomed to graze on a certain side or section of a range would contract the disease, horses on the other side or on ranges adjacent thereto would remain perfectly healthy, although there were no barriers intervening or anything to prevent the animals freely commingling, which no doubt they often did.

The subjoined notes on the clinical and necroscopical characters of the disease in question were taken in the fall of 1892, a season when the disease was very rife, and when I had more extended opportunities for observing it than have occurred to me at any subsequent season. The present winter in Montana is unprecedentedly mild, and several outbreaks of the disease have been recorded. The type, though not so virulent, remains much the same as seen in 1892.

Horses when first affected are observed in a drooping attitude and standing apart from the herd. There is stiffness of the hind-limbs and a dragging of the same, with an uncertain staggering gait, due evidently to want of muscular control or incoordinate voluntary movement. There is a plaiting of the hind-limbs, seemingly due to weakness in the lumbar and gluteal regions. This symptom is a very noticeable one, especially when the animal is seen from a little distance and moving on a hillside. It has been attributed by ordinary observers to "kidney disease." The body temperature in very acute cases ranges up to 105° or 106° F. The subjects in which such intense thermic activity is maintained for several days at the start frequently die at this stage, and in those cases in which the reactionary period is reached the subsequent prostration and debility are very marked. The fever is of a distinctly remittent type, and its exacerbations would seem to depend to a great extent upon any sudden lowering of weather temperature.

I have observed that cases which had been stabled and submitted to medical treatment, and which appeared to be convalescing nicely—the body temperature having subsided to the normal—would frequently be found after a sudden cold spell to be suffering from a relapse, with an accession of fever. These relapses would leave the patient weaker and weaker and more emaciated, till death would take place two or three months or

even longer after the primary attack. In such chronic cases a remarkable pallidity of the conjunctival and nasal mucous membranes is an almost unfailing symptom, even though the temperature may register three or four degrees above the normal; pulse up to 120° or higher; the heart-beats being abnormally loud; the cardiac impulse strong, but the submaxillary pulse small and feeble; jugular regurgitation; œdema of the limbs and under the chest and abdomen. A pneumonia of subacute type frequently supervenes in the later stages, and is accompanied by all the distressing symptoms of that condition. Irritability of the kidneys and bladder may be evinced by repeated evacuations, and pregnant mares commonly abort. When first attacked, blood-blotches, or petechiæ, are sometimes seen on the mucous membranes of the eyes and nostrils, or there may be evidences of actual hemorrhage from the latter. The appetite, as a rule, is in abeyance during the fever-stage; at other times it is fairly good.

The post-mortem appearances are such as are generally associated with blood-diseases. In the case of horses which die early the blood is dark-colored; it may remain fluid, or is feebly coagulable, or the fibrin constituent will have been found to have separated itself into one or more long plugs, filling the aorta and large arterial trunks. In chronic cases the blood is thin, watery, and deficient in coloring matter; the lungs at their front lobe, or lower margins, œdematous or solidified; increased pericardial effusion, and there may be deep staining of the endocardial membrane. Blood-spots are sometimes seen on the exterior of the small intestines. The solid viscera generally, in chronic cases, are softened in texture and seem to be undergoing a breaking-down process. The spleen is frequently enlarged to three or four times its natural size, its pulp black, and on exposure to air it becomes tarry in appearance. In one case examined the membranes of the spinal cord were congested in the lumbar regions, with an increase in the subarachnoidal fluid. Microscopically the blood shows that the red-corpuscular element is greatly diminished, and in some cases almost entirely disintegrated.

I have several cases of the disease at present under observation and treatment. This latter is not, as a rule, in any but mild cases attended with satisfactory results. The various antiseptics, soda hyposulphite, potass. chlorate, quinine, arsenic, and many other agents have all been tried with varying degrees

of success. It is only in the case of the more valuable breeds or broken horses which are unfortunate enough to contract the disease when turned for a season on range-pasture that it would repay the owner to attempt treatment. In the case of common unbroken range-horses individual treatment would be unprofitable as well as impracticable. While convalescence is not uncommon, I have rarely seen a well-developed case of the disease wholly recover; the weakness of the hind extremities persists even when the patient is otherwise apparently well.

It is difficult to estimate the mortality in any one season among horses in Montana from this disease. In former years bands of one hundred head or more have been sadly decimated, but of late it has not been so marked, and owing to the great depreciation in value of range-horses, pure and simple, and their unsalability at any price, the finding of a few dead horses at intervals does not excite any comment.

As in the case of Dr. Scott's obscure disease, anthrax was suspected, but bacteriological investigation failed to reveal the bacillus anthracis. There is no evidence that the disease is contagious; the infecting material would seem to be derived from the soil or food. Work-horses stabled and only turned out at intervals to graze have been known to become affected.

I have long entertained the idea that some parasitic fungus developed upon the grasses was the prime factor in developing the disease in question in Montana range-horses, and such an hypothesis is equally tenable in the case of the Wisconsin horses. In my first annual report to the State Board of Stock Commissioners, dated December 31, 1895, occurs the following extract referring to this disease: "Its clinical and necroscopical characters point to some pathogenic organism in the blood as the active agent, and this is in all probability developed upon and conveyed into the system by the food."

Much is yet to be learned regarding this disease as observed in this section of the Rocky Mountains, and should favorable opportunities occur it will form an interesting subject for experimentation and microscopical investigation at no distant date. It would be very interesting to learn if veterinarians in any other portions of the Rocky Mountain regions have observed a similar disease among horses.

GLANDERS IN HORSES.¹

BY DR. E. H. BIART,
LANSING, KANSAS.

WHILE the contagious nature of glanders has been admitted from the earliest period, it seems from the recent observations and experience of the veterinary surgeon in charge of the Veterinary School and Hospital at Lyons that glanders is not as highly contagious or infectious as it has been supposed to be, for of a hundred horses exposed to the contagion of the disease only eight contracted the affection. But all medical men will admit that the propagation of any contagious disease in a great measure depends upon the predisposing causes that may exist at the time. It is probable that the horses exposed to the contagion were in robust health, possessing in a large degree that vital power which enables them to resist contagion. The principle of contagion in glanders, whether strong or weak, is admitted by all observers; and we believe it is generally the exciting cause. Nevertheless, as a general law, it may be stated that as is the case with smallpox and other contagious diseases incident to man, so it is with the first horse that suffers with glanders: it must necessarily have taken it without contagion. So it may occasionally be engendered by causes of which we are ignorant.

It may be stated, also, that contagion, once generated, multiplies itself without any assignable limit. It may be proper to explain what is meant by contagion. It is here used in its specific sense, meaning the direct transmission of disease by means of a specific virus from one animal to another by natural or artificial inoculation. Horses recognize and communicate with each other by the sense of smell. It is in this way, perhaps, that the mucous membrane of the nose becomes the first apparent seat of glanders. The glandered horse blows the virus from his nose on everything around him, and the disposition of these animals to recognize animal matter wherever found induces the sound horse to investigate the character of the noxious secretions. He does this by a strong inhalation; the virus is in this way drawn up and retained upon the delicate mucous membrane of the nose, or is, perhaps, caught by the

¹ Read at the Missouri Valley Veterinary Association's meeting.

roughened surface of an abrasion; it finds its proper nidus and multiplies its morbid influence. It is possible that a horse may have glanders for several weeks before it becomes an agent of active contagion, from the fact that the disease is often slow and insidious in its onset; and it is only when the mucous membrane of the nose becomes irritated by chancrous ulcers that the snorting out of the virulent matter occurs, every surrounding object then becoming a deposit for the virus.

The disease commences very insidiously, but increases steadily in virulent malignancy to rapid decomposition of the blood, exhaustion, and death. The first symptom that attracts attention to an animal in the onset of an attack of glanders is a watery discharge from the nostril, without fever, loss of appetite, or unusual disturbance of any kind. In every instance of my observation coincident with the watery discharge of the nostril I have found the lymphatic glands beneath the angle of the lower jaw on the side corresponding to the affected nostril engorged, with a tendency to become adherent to the adjacent branch of the jaw-bone; they may be movable up and down, but confined and restricted by the adhesions to very limited movements, and they never suppurate or form abscesses. In this stage of the disease the mucous membrane of the nostrils will have lost its natural color, and most frequently, but not invariably, presents a pale-buff aspect with purple dots or patches of congestion as it extends up the cavity of the nose, and these patches, on close examination, will be found to be an aggregation of small over-distended bloodvessels. In many instances the mucous follicles will seem elevated on the surface of the membrane of the nose, and sometimes will present a purple hue.

Several days may elapse, the animal still without fever, cough, or loss of appetite; the coat may stare or become rough, and there is appearance of ill-health. The watery discharge of the nostrils becomes more abundant and glutinous, the lymphatics become more engorged and adherent to the bone; the congestion of the nasal mucous membrane increases; the most prominent follicles degenerate into small ulcers; and the discharge soon assumes a thick, yellow, purulent character and becomes still more abundant. Cough now supervenes, more or less frequent, produced by the general irritation and inflammation of the air-passages, and the tendency to sneeze and snort out the purulent matter begins.

The disease may now progress with this continuous puru-

lent discharge from the nose for weeks, and indeed for months, while the ulceration is extending throughout the course of the mucous membrane into the remotest cavities of the nose, in the interior portion of the skull. During this time hemorrhage of the nose often occurs and proves very exhausting to the horse. The constitution is now gravely affected, the animal becomes emaciated, the legs swell, and swellings occur about the head and lips. Generally by this time the blood becomes so poisoned that death soon occurs.

Of the 100 horses exposed to the disease, as before mentioned, only 8 caught it by infection, and at another trial where an almost equal number were exposed, as experiments, 20 of the exposed animals were affected. But in every instance where horses were inoculated artificially or exposed to direct contagion they invariably caught the disease. This goes to prove beyond a doubt that glanders in horses is far more contagious than infectious.

ACTINOMYCOSIS.¹

BY J. L. WINGATE,
STUDENT.

THE subject of my essay to-night is one which has excited a great deal of interest all over the world, and at the present time there is considerable difference of opinion among some of our great scientists, but one fact is quite clear to us all, that actinomycosis, like so many other of our contagious forms of disease, is proved to be caused by the existence of micro-organisms.

During the last ten years great discoveries have been made in bacteriology, or the germ theory, as it is sometimes called. For this knowledge we owe much to such able men as Pasteur, Graves, Nocard, Darwin, and many others. I read with great interest a little bacteriological sketch on *Zymosis and Pathogenesis*, in which, among other topics connected with bacteriology, was the history of M. Pasteur's early life and the way in which he achieved some of his great discoveries with the microscope. For instance: In France, in 1853, the silk-culture was becoming very much impoverished by a contagious disease among the

¹ Read before the Veterinary Medical Association, Ontario Veterinary College, October 25, 1895.

worms, known as "pebrine." Every conceivable means had been tried to check it without success, the government then called on M. Pasteur to make investigations, and he, after many months of diligent work, succeeded in finding out the cause and was able to restore to France one of her greatest industries.

Professor Charcot, the neurologist, says: "Art without science is apt to degenerate into routine;" and another remark of his is: "The hackneyed skepticism which people so willingly oppose to all progress of the human mind is a comfortable pillow for lazy heads, but the period in which we live allows no time for falling asleep, when every hour must sweat her sixty minutes to the death."

To return more particularly to the disease in question, actinomycosis is communicable to man, therefore the public health is endangered by its existence. For this reason alone the disease becomes one of importance, especially to us as members of the profession, because some time during our practice we are sure to be called to one of these cases and our opinion asked as to whether the flesh of such an animal is fit for human food. Who should be more competent than the veterinary surgeon in this work of examining meat killed for human food? But some people say it should be the medical man that should make these examinations; why, I cannot conceive. What does a medical man know about the lower animals? What should he know? No, gentlemen, it is decidedly in our department, but it remains with each and every one of us to keep the profession at the proper standard by advancing with the progressive age in which we live; if we do this our results will overthrow such prejudices, proving we are not behind the age in this particular branch of our work as is so often supposed.

As recently as the middle of the present century actinomycosis was thought to be a form of "scrofulæ," or another name for it was "clyers." In 1863 Rivolta discovered in the diseased tissues the existence of the rayed fungus, but it was not until 1877 that Bollinger discovered the constant presence of this low form of bacteria, which is now known to be the vegetable parasite actinomycetes.

This disease is peculiar to cattle, although it is occasionally seen in the hog and man. It is caused, as I have just mentioned, by the vegetable parasite actinomycetes. Of the life-history of this parasite very little has been discovered up to the

present time, but it is generally believed that the animal becomes infected through its food; whether the source is any particular plant or group of plants, or whether it is from the nature of the soil, still remains a mystery. It is claimed by a veterinarian in Denmark that grain or hay grown and harvested on land recently reclaimed from the sea will cause the disease. Barley, barley-straw, rye, Indian corn, seem to be the most common medium by which the disease is communicated to cattle, but an animal may become infected, or, more properly speaking, inoculated, through any of the natural orifices of the body.

Take first the most common and worst form of this disease, that effecting the head, sometimes called "lump-jaw," "big-head," "wooden-tongue." Here we have the fungus carried into the mouth by means of the food; the mucous membrane may become pricked during mastication by the sharp points of the straw, or, as is commonly the case, by the sharp spikelets found on the cleaves of barley; thus an entrance is made for the fungus and the seeds sown of this loathsome disease. Again it is said by some that dentition plays an active part in giving access to the fungus. The eruption of the teeth in the ox commences at two years, and the full mouth is attained at four years or a little more, so we may say that any time between the age of two and five years the teeth are in a constant state of eruption; during this time the fungus has a splendid opportunity for gaining access to the parts. When we consider that the bones of the jaws are more often affected than any other part of the animal, this explanation seems very satisfactory. Another point which helps to strengthen this theory is, that young animals are more often affected than the old ones.

The enemy installed, we will now follow the development of the disease. In the early stages its progress is very slow; it may be a year or two before the animal shows any of the characteristic symptoms; but the disease slowly but surely develops according to the existing conditions. An affected animal will first cease feeding, and consequently fall away in condition; if a milch cow, she will go off her milk and show the general symptoms of disease. The jaws will begin to enlarge according to the situation of the tumors, and an examination of the mouth shows the teeth to be involved, becoming loose and interfering materially with mastication. If allowed to go on the tumors will attain, in some cases, an enormous size, sometimes as large as a man's head; finally reaching the suppurating stage, and

terminating in an open sore from which there will be a continuous discharge of pus.

I have been speaking more particularly of that form of the disease affecting the jaw-bones, but it must not be forgotten that any part of an animal may be attacked; sometimes the seat of the disease is the soft structures of the head, involving the tongue, larynx, pharynx, salivary glands, more especially the parotid gland. The tongue in this case becomes very much swollen and as hard as wood, hence the term "wooden-tongue" which has been applied to it (this form of the disease being the one most prevalent in England); or the lungs may be extensively diseased, but rarely the intestines. It is not uncommon to find the umbilicus involved. The tumors have a special tendency to work toward the mucous and cutaneous surfaces. The disease is sometimes mistaken for tuberculosis, but an examination of the tumor, wherever it is located, with a common pocket-lens will always show the ray-fungus to be present in actinomycosis.

For treatment the internal administration of iodide of potassium has proved quite a specific. This is well shown by the experiments made at Chicago a short time ago, where 185 animals suffering from this disease in all its stages were quarantined under this treatment; in some the tumors had attained a great size. The whole were slaughtered and carefully examined; out of the total number, 71 per cent. were found cured; those showing internal lesions were 7, or 3.8 per cent. of the animals under experiment. It must be remembered that a considerable number of these animals had the disease in the advanced stages, so the results on a whole were very good. If the disease is taken in hand during the early stages I think it will be safe to say that 90 per cent. can be cured. It still remains a mystery in what this specific effect consists which iodide of potassium has on the actinomyces fungus, but we know it has great absorbing powers when given internally, especially on all pathological accumulation of cells. In connection with protoplasm, carbonic acid, and water, the iodine will become free and combine with the cells of the pathological product, which will decrease their vital power and facilitate their absorption. From the fact that the iodine salts are rapidly absorbed by all glandular structures, it would not be advisable to give iodide of potassium to milch cows as it would reduce the milk-secretion or stop it altogether; furthermore, a great

part of the medicine is excreted through the milk, making it unfit for food. This drug permeates all the tissues of the body, including the muscles and bones, but is rapidly excreted again through the urine and milk. Care must be taken in the use of this medicine, because, even when given in proper doses, after a certain time the iodine will not only affect the diseased tissues, but combine with the normal cells in the body and produce serious symptoms called iodism; these are general emaciation, atrophy of lymphatic and mammary glands, combined with chronic catarrh of the nose and conjunctiva, and desquamation of the epidermis; if large doses have been given catarrh of stomach and intestines may be produced, and even hemorrhages. The feces will be hard and dry, coated with mucus or perhaps blood.

The dose of iodide of potassium for an averaged-sized animal is 3ij-3iij twice a day until the first symptoms of iodism are manifested, which will be from one week to ten days; it should be at once stopped for two or three days and a dose of magnesia sulphate given, then the patient is ready for another week's treatment, and so on until recovery.

Post-mortem examination shows the actinomyces in small masses, which are easily seen by the naked eye; they are white to yellowish in color and of hard consistency, due to formation of fibrous tissue. Sometimes they are gritty in character. Take one of the largest masses, and it looks very much like a handful of rice would deposited in a heap. The masses are club-like in shape, radiating from the centre to the circumference of the tumor, the external surface consisting of the rounded thick ends. Suppuration commences in the deep parts of the tumor, then the elements become indistinct, forming an amorphous mass, which in time may become calcified; the ray appearance always remains on the surface. The fungus first develops in giant-cells surrounded by fibrous tissue; thus the definiteness of the growth of the tumor is seen from the surface to the centre. When it is a bony structure that is involved the swollen bone becomes arranged in bands, the spaces between being filled up with a creamy pus-like substance of a gelatinous character, giving it a spongy appearance. These growths commence first in the medullary portion, gradually working to the external surface. In this tissue the parasite seems to thrive luxuriantly, consequently we find the bones of the jaw and the tongue most often affected. Sometimes we have cold abscesses instead of

hard tumors, but they never attain a great size, and the parasite is found intermingled with the pus which the abscess always contains. When the disease attacks man there is a great tendency to the formation of these abscesses, with considerable necrosis of tissue, often proving fatal through pyæmia resulting.

I must give a few lines on prevention before I close. Knowing that animals contract this disease principally through the medium of their food, much has to be discovered of the life-history of the parasite before any satisfactory measures can be expected on this score; but not infrequently man has contracted the disease by the habit some people have of picking up a piece of straw and chewing it, so we can take a warning here. From what I have said in the previous part of my essay concerning the way in which the fungus enters the system, I think you agree with me that the disease is inoculable rather than contagious; hence animals suffering from actinomycosis should be isolated and attendants should be warned to be careful, especially if the case has gone on to suppuration, not to get the discharge into any open wounds they may have on their hands; and last, but not least, is the careful inspection of our stockyards and slaughter-houses. This parasite, like all others, is destroyed by sufficient cooking; but even this does not warrant eating the meat of affected animals. Therefore it is a question whether all animals suffering from actinomycosis should not be rejected as unfit for food. Cattle are plentiful and comparatively low in price, and the preservation of health and prevention of disease in man must be considered at any cost. This last statement may seem rather a bold one to make, but I have an article from one of the medical journals which justifies what I have said.

TUBERCULOSIS.¹

BY DR. JOHN FORBES,
ST. JOSEPH, MO.

MUCH has been said and written recently in regard to the subject of tuberculosis, and to many it may seem a rehash to consider it again. When, however, we know that a great proportion of the deaths in the human family are due to tubercu-

¹ Read at the regular meeting of the Missouri Valley Veterinary Association, October 2, 1895.

losis, that the disease is common to man and the lower animals, and that its existence in the animals that maintain the food-supply of man is a menace to public health, and when we consider that the veterinarian must be the guardian of the public health in this respect, I think you will agree with me that it is a subject that cannot be too often considered. I regret very much that other duties have prevented me giving the attention to the subject that it demands, but what follows I trust will evoke a hearty discussion of the subject. In laying it before you for your consideration and discussion, I wish only to emphasize a few of the most important features of the subject. Koch's discovery effected a complete reformation in the clinical views of tuberculosis. All sorts of theories prevailed prior to that. Clinical medicine reconstructed itself to comply with the views imposed by the discovery.

Of the various points in the subject none seem to be more assailed than heredity. There has been no direct proof of the inheritance of the disease, but it is a clinical fact, nevertheless, and one of almost daily experience, that the disease reaps its harvest among the offspring of tuberculous parents. When the disease appears at an early age the hereditarians believe that there has been an hereditary infection instead of an early direct infection.

There are many ways in which the young can be infected. Close contact with a diseased mother or other diseased animals, and the contamination of the food with sputum containing the bacilli. Milk, however, especially in the human subject, is the most frequent source of infection, and it is surprising how little the general public are enlightened upon this subject. They recognize that the disease exists in the beef-supply, and they consider a rigid inspection of meat a matter of necessity, but they seldom think of the dangers lurking in one of the most universal articles of diet. Even in intelligent families too little attention is paid to the source of the milk-supply for children. It may be that the fear of infection by milk is exaggerated, but one can hardly think so when we hear of the frequency of tuberculosis of the mesenteric glands in the young. It is obvious, then, that a great responsibility rests upon those who have the supervision of the health of children.

There are other methods by which infection may take place and which may simulate hereditary transmission. A diseased progenitor may contaminate the stables or utensils and impart

the disease to the young, and the less space allowed to animals and the closer they are confined increase the danger.

While we cannot believe in hereditary transmission, experience shows that the offspring of tuberculous progenitors sooner or later manifest the disease when exposed to the exciting cause, and we also know that nurses and attendants in consumptive hospitals, while exposed continually to the danger of infection, very infrequently contract the disease. We are thus compelled to acknowledge that a healthy body can resist the attack of the bacillus, and that the bacillus in order to flourish must have a suitable pabulum. Vigorous parents will bestow upon their offspring a vigorous constitution, and weakly parents bestow upon their offspring their habits of body. In this bestowal of a weakly habit of body on the offspring we may find an explanation of the theory of heredity. But it matters not if we do have this weakly constitution, the bacillus is an absolute necessity to the propagation of the disease. The bacillus of tuberculosis is not ubiquitous. It only exists in the immediate vicinity of a tuberculous patient, hence it must exist plentifully in the popular resorts for consumptives, and we must conclude that when the resorts are well patronized by tuberculous people they are dangerous places for delicate persons.

Besides this inherited weakness of the system, the so-called "tubercular diathesis," there are other influences which may reduce the organism to the state suitable for the propagation of the bacillus. In cattle the most potent influences are overcrowding and excessive milking, a very common occurrence in city dairies, and let me impress upon you the fact that a phthisical attendant of dairy cattle may be a source of danger, not only to the health of the cattle, but to the public who consume the product of that particular dairy. The city that does not have a scientific supervision of the source of its milk-supply lacks in its duty to its citizens. There are cases on record of a phthisical patient who imparted the disease to chickens in his yard that devoured the sputa; of another who inflicted the disease upon two pet dogs in succession, and would have given it to the third had the patient not died before it could be affected. If that can be said of these animals, might not the same be true in regard to cattle? Even if it were not, there is always the danger of the milk becoming infected through the dried sputa of the diseased attendant, and we all know that milk is one of the most frequent habitats of diseased germs.

We have seen that the bacillus must find entrance to the body before we can have tuberculosis, and it may be of interest to us to know how it gains access. Infection through wounds has often been recorded, and in such cases the process of repair is retarded, the infective process spreads to the adjacent glands, and ultimately results in general tuberculosis. Fraenkel relates that this has taken place in surgical operations. Through the alimentary canal infection often takes place by the ingestion of contaminated food. Being able to resist the action of the gastric juice, the bacilli readily gain entrance to the abdominal glands. The most frequent point of entrance of the bacillus is the respiratory tract. As with the other methods of infection, the same conditions do not prevail in this instance. The substance that contains the bacilli must first dry up and be reduced to a powder, and the bacilli be lifted into the air, from which it is inhaled. Only such bacilli as withstand the drying process can enter this way, and it must be remembered that the tubercle bacilli has a great power of withstanding this drying process. This theory as against the other, that the bacteria free themselves from where they are contained and are carried upward by the air or by evaporation, has been clearly proven by a series of beautiful experiments related by Fraenkel in his book on bacteriology. Dust collected from a dwelling where dwelt a phthisical patient produced tuberculosis in a guinea-pig. Dust taken from a place where there was no consumptive produced negative results. It was found that the dried sputa found in the pocket-handkerchiefs of consumptives was a prolific source of the bacteria. As I have already indicated, every consumptive is a source of danger to the health of animals as well as to the people around him.

The bacilli having gained access to the body, by virtue of their biological quality, they originate an irritation resulting in a true inflammation. It is then that a struggle for supremacy takes place between the cells of the tissue on the one hand and the bacilli on the other, and the result is determined by the vitality of the cells or the infectiousness of the bacilli. Should the cells conquer the bacilli are destroyed before they can do any injury, but if the bacilli conquer the result is well known.

It may interest us to glance at the theory of phagocytosis. Phagocytes are formed of leucocytes and fixed connective-tissue cells. They are of two kinds, the large and the small. It seems to be the duty of these elements to fight the battle on

behalf of the organism against the invasion of the bacilli. As soon as the irritation is set up they hasten to the battlefield, and the fight is on to the death. The phagocytes endeavor to devour the invaders, to digest them, and render them sterile. It seems that certain bacilli do not require the whole force of the phagocytes. For instance, the streptococcus of erysipelas can be overcome easily by the small phagocytes, as can other micrococci; but in the case of tubercle bacilli both the large and the small phagocytes take part in the fray, evidently proving that the bacillus tuberculosis is a formidable adversary.

I bring this theory to your notice in the hope that we can elicit some discussion on the subject, as I have never heard the question considered from this point, and I hope to gain some information from it.

A 1½ to 2 per cent. watery solution of trikresol will be found of great value in mild cases of eczema and in the early stages of mange of dogs; it is also useful where rubbing and itching bases of tails prevail among colts or horses when wintering.

The use of injections of solutions of carbolic acid as a preventive of infectious abortion among cattle should be given more extensive trial and investigation.

The better care of nail-wounds among horses in Delaware has resulted in a lowered death-rate from tetanus. The favorable use of tetanin in one case is reported, though the case ran the usual course.

Ringworm in cattle, especially among calves, may be dealt with successfully by using corrosive-sublimate washes, followed by painting with tincture of iodine.

The latest researches establish only indirect relationship between the large bloodvessels in the region of the udder and the quantity and quality of the milk-production. Further, that milk is an original secretion, similar to the product of the salivary gland, and not merely changed blood. Its ease of flow and fluctuations in quality are the results of disturbances, such as pain, inflammation, worryment, which exert their direct influences on the nerve-supply of the mammary glands.

ABSTRACTS FROM FOREIGN JOURNALS.

THE SWINE-PLAGUE (SWINEPEST) IN AUSTRIA. The following abstract is taken from the report of Prof. Hugo Schindelka, member of a committee appointed by the Veterinary Association of lower Austria to collect statistics and report upon the disease, printed in the *Thierärztliches Centralblatt* of January 1 and 15, February 1 and 15, 1896.

As is now pretty well known, we were surprised in the early months of 1895 by the breaking out of an epidemic among swine, which spread with extraordinary rapidity, threatened almost all the herds of swine in the land, and through its virulence carried off an extraordinarily large number of animals. Such a devastation among hogs as this epidemic caused has never been experienced before by the younger members of the present generation. An epidemic which has endangered the whole swine-traffic and swine-breeding to such an extent had never been observed in our provinces. At the same time the epidemic showed such polymorphism of phenomena and such deviations in the course of its development that it was difficult for the superficial observer to believe in the etiological unity of all the numerous cases of the disease.

The committee sent out printed lists of questions to the various districts, and it is from these that I make my report; as only seventeen answers have been received, the same must necessarily be somewhat incomplete, and in regard to the clinical observation I have often had recourse to my own experience in the cases which came directly under my charge.

The spread of the disease occurred, according to all reports, mostly through the contact of hog with hog in common pens, during transport, and also in common pastures. It is generally supposed to have been the hogs which were imported from Galicia and Hungary and those bought in Wr.-Newstadt and Biala which communicated the disease to the native Austrian herds. Messrs. Greiner and Weigl have called especial attention to the fact that the manure of sick hogs has often been the means of infecting healthy animals, and there is no doubt that many cases have occurred in pens which were not kept clean. Cases occurred even in pens which were said to have been *disinfected*, and I take occasion to say just here that there is no

proceeding which does so much mischief as this disinfection when it is not carried out by men who thoroughly understand their business. No other means has attained such a popularity and none forms such a catch-word in the case of contagious diseases, but none has sunk to such a mere perfunctory performance with very indefinite limits. Among the masses of the people it is common to sprinkle lime-water, green vitriol, carbolic acid, etc., about the places supposed to be infected; but if disinfection is to be effective, it must be carried out with regulations designed to stamp out the disease, particularly by quarantine, as the reports show that a large number of the cases were infected by the manure, or in the pens which were separated from infected ones by very insufficient division-walls and fences.

In one or two cases infection from attendants who visited the infected stalls is supposed to have taken place, showing that too much care cannot be exercised in keeping the hands and particularly the shoes clean in going from pen to pen.

According to the reports and the experience which we have had here, swine of *every breed*, of both sexes, and of every age are equally susceptible of the contagion. The contrary views in the different reports which assert that this or that breed, that this or that sex, show at one time a greater, at another a less, disposition to contagion, give, in the fact that they are so contradictory, the very best proof for the opinion put forth at the beginning of this paragraph. Nevertheless, it is certain that in the case of this epidemic a certain innate immunity is sometimes, though not often, to be observed in this or that individual. Two cases have come under my own immediate notice. Five very well-bred hogs born at the same time (from the same mother) had been kept together in a pen into which the disease had crept from an adjoining one. Three head died, a fourth fell sick and showed the disease in its different stages and remained sickly, but the fifth, although it had been the whole time in the closest contact with the infected hogs, was not sick a single hour, nor did it show later the slightest symptoms of infection. In the second case, a sow with four sucking pigs, succumbed to the disease, while two others remained wholly untouched by the epidemic.

(To be continued.)

RIB-FISTULA IN A COW, by J. H. Cramer. Some time ago I was summoned by a farmer in Ambt-Almelo to look at his

four-year-old black-brindled cow, which had a diffuse swelling about the size of a child's head on the right rib-wall near the seventh and eighth ribs, just above the elbow. In the middle of the swelling mentioned there was a very small opening which had been discharging for two weeks a small quantity of offensive pus, while the patient, especially in the last four days, had fallen off in her feeding and in the secretion of milk. Pushing down with the probe into the opening of the fistula, I found that it was impossible to penetrate further than a few centimetres, so that I was compelled to make a good-sized opening with the bistoury.

After the tissue of the swelling had been partially destroyed I succeeded in pressing the finger deeper down. I met very quickly a sharp object, so that I supposed I had to deal with a darning-needle or some other pointed object. After some manipulation, however, it became clear that there was a necrotic piece of bone with a sharp point at the bottom. I succeeded with some difficulty in separating the piece of dead bone mentioned from the ribs, and in removing it it seemed to be about 7 cm. long and half as broad. The usual treatment of open wounds produced a perfect healing after some weeks.

The owner of the cow informed me, in conclusion, that the patient about five weeks before had been hooked by another cow in the pasture, in consequence of which a swelling about the size of one's fist had arisen. I think I am justified in supposing that this injury produced ultimately the sequestration of dead bone.—*Tijdschr. voor Veeartsenijkunde*, January number.

TREATMENT OF ACUTE PRIMARY PERITONITIS IN CATTLE, by J. H. Cramer. Dr. Carsten Hames, in his *Cattle Diseases*, recommends in cases of primary acute peritonitis borax to be given through the mouth, while he makes use of derivantia and Priessnitz's applications (poultices, plasters) externally.

We read in general, even in the Buitenland journals, very little in regard to peritonitis in cattle, and I am free to express the opinion that this disease often occurs as a primary idopathic malady; however named, no reason can be assigned for its appearance. We must either assume that some infectious matter derived from the blood is the cause of the disease, or that a rheumatic influence gives rise to it.

It has occurred to me several times that I have had cattle to treat which ate little or nothing, were very dull, showed

a light degree of tympanites, and had a temperature of 40° to 41° , with a rapid pulse, and gave evidence of suffering when the wall of the belly was pressed, so that an ordinary stomach-catarrh could not possibly be the trouble. If we add a typical dashing sound on thrusting them in the left side, caused by the accumulation of fluid in the abdominal cavity, and a usually slow and painful evacuation of manure, these are the principal phenomena which lead me to a diagnosis of peritonitis. In severe cases in which death ensued I found on cutting, for the most part, the typical symptoms of peritonitis. Whenever I have established inflammation of the peritoneum with any degree of certainty I have always treated the patients with large doses of biborax natricus three times daily, 100 grammes, with some pulvis baccarum juniperi. I have further applied to the wall of the belly a sharp ointment (or plaster), and have had this put on warm.

In one or two days, except in very severe cases, an improvement takes place in the animals so treated, and, as a rule, a full recovery is secured in eight to ten days. In cases of metritis also I have had success with the internal application of borax in large doses.—*Tijdschrift voor Veeartsenijkunde*, January, 1896.

STERILIZATION OF TUBERCULOUS MEAT. According to ministerial decision of September 30, 1895, it has been enacted in Belgium that meat coming from tuberculous cattle, which otherwise would have to be discarded, can be sold for consumption in case it has been exposed to a moist temperature of 110° C. under the supervision of a veterinary surgeon for at least three hours in a sterilizer which is approved by the Minister of Agriculture and Public Works.—*Tijdschrift voor Veeartsenijkunde en Veeteelt*, January, 1896.

BELGIAN LAW OF OCTOBER 30, 1895, AGAINST TUBERCULOSIS IN CATTLE. This law, consisting of thirty-four articles, goes into effect January 1, 1896. The following are the principal points:

Every animal coming from a foreign land must on importation be provided with an indelible mark. In case it, on account of the existence of clinical symptoms, is considered as suffering from or is suspected of tuberculosis, it shall be immediately sent back to the country from which it was imported. If this is not complied with, the animal must be dispatched within three days.

Importation of cattle is forbidden from any country in which tuberculosis exists; if it is decided not to insist on this regulation, then the cattle which are to be imported must be subjected to a tuberculin-test.

Importation of tuberculin or the transportation of the same within the land and inoculation with the same cannot take place without the authorization of the Minister of Agriculture and Public Works.

Whenever an animal upon slaughter shows signs of having suffered from tuberculosis, the owner must make declaration of the same; and the cattle from the same stable are to be declared suspected. Every veterinary surgeon who recognizes tuberculosis in a living or dead animal must report this at once to the veterinary surgeon of the district. Cattle that, on account of the existence of clinical symptoms, are found to be suffering from tuberculosis, and in like manner those which being suspected have reacted upon the test, are to be killed. The cattle which are standing in the same stable or yard cannot be sold for food purposes unless they have been inoculated with tuberculin and have *not* reacted upon it. These inoculations take place at the expense of the State.

Every cattle-owner can receive authority to subject his cattle to the tuberculin-test; if one animal reacts, it must be dispatched immediately, and the test repeated subsequently.

The State pays half of the value of the slaughtered cattle whenever the meat cannot be used for consumption, on condition that the owner has the rest of the animals inoculated with tuberculin.

The government pays 70 per cent. of the value of the animals dispatched according to its order in case the meat is unfit for consumption; if it can be used, the owner shall receive only 25 per cent. of the value of the animal.—W. C. S., in the January *Tijdschrift voor Veeartsenijkunde en Veeteelt*.

FILARIA IN THE EYE OF A DOG. A six-year-old shepherd's dog had kerato-conjunctivitis in the right eye. As the dog bit the disease was neglected, so that panophthalmitis developed. When the animal was received by Rossi for treatment a fistula of the cornea was present, out of which a part of the iris had slipped forward. The front chamber of the eye was filled up with a purulent, fibrinous exudation.

The eye was extirpated. On cutting through the bulb there

was found in the middle of the exudation a female filaria, whose species the writer cannot determine. It had a pale-red filiform body striped lengthwise, of about 14.7 cm. in length and about $\frac{1}{2}$ mm. in diameter. The head-end was rounded off, the tail straight and pointed, the mouth circular and bare, the œsophagus short. A slight widening of the intestine formed the stomach, which was coiled. The anal opening lay 1 mm. from the end of the tail. The uterus was double, dangled about, and contained a small quantity of eggs with embryos. The vaginal opening was separated about 5 mm. from the mouth.—*Berliner thierärztl. Wochenschrift*, 1895, No. 47, in January number of *Tijdsch. voor Veeartsenijkunde*.

FERN-EXTRACT AS A REMEDY FOR TAPEWORM. An interesting case of poisoning has just happened in Augsburg. A physician prescribed fern-extract for a servant girl suffering with tapeworm, and gave her a relatively very small dose: 8 g. Very doubtful symptoms followed very soon. The girl was seized with cramps and died with epileptic symptoms which pointed clearly to poisoning. The physician reported the case to the authorities at once. The body was subjected to a post-mortem examination, with what result is not yet known. Similar effects have happened before with the same medicine, but only rarely. The matter is of especial importance, inasmuch as fern-extract is a very common remedy for tapeworm.—*Thierarzt Centralblatt*, December 15, 1895.

OPERATIVE TREATMENT OF ATRESIA ANI ET RECTI, by J. H. Cramer. Some time ago in the district of Ambt-Almelo my assistance was asked by a farmer in the case of four young pigs, which, according to his statement, had no anal opening, and accordingly could make no defecation. On examination I found the four-weeks-old pigs very backward in growth, so that they looked as if they were one to one-and-a-half weeks old. They had bellies as round as a barrel, which gave them a very ridiculous appearance on account of their leanness.

No. 1 had a simple atresia ani, so that after removing a piece of skin the size of a ten-cent piece from the normal situation of the anus, I could press my finger into the rectum. The consequence was that a mass of thin feces was evacuated, certainly a litre, while the apparent plumpness of the animal suddenly vanished. Nos. 2 and 3 were subjected to the same operation with a similar result.

In No. 4, however, there was first an atresia ani and also an atresia recti, so that I could not press my finger into the rectum after removing a piece of skin. At the same time there was present a recto-vaginal fistula, in consequence of which fecal matter had been evacuated by way of the vagina. Recovery I considered impossible here, and the animal was dispatched. The three first-mentioned pigs were very much restored and grew rapidly after some weeks.

Although Möller in his *Operative Surgery* asserts that animals with atresia ani or recti die very soon, if relief by means of an operation is not given, nevertheless these patients remained pretty healthy for twenty-eight days, and continued to live without serious disturbances at least.—*Tijdschr. voor Veeartsenijkunde*, January number.

RESULT OF ABORTION UPON THE MILK.¹ Not infrequently farmers and milk-dealers, when detected in selling adulterated milk, resort to the subterfuge of explaining the condition as being due to a modification of the secretion brought about by abortion in cows. A scientific substantiation of this explanation has not been attained. The authors made thorough examination in seven different cows as to the result of abortion upon the constitution of the milk-secretion, and came to the conclusion that the results would not warrant such an assumption. They found, indeed, a variation of from 2.37 to 5.75 in the fat. This, however, was easily accounted for by the individuality of the separate cases, and the other elements were in proportion to the fat. They also examined the milk of one cow suffering from placenta-retentia, which likewise failed to give noticeable change in its constitution.—SHAFFER and HESS, in *Zeitschr. for Meat and Milk Hygiene*, Berlin.

PARENCHYMATOUS MASTITIS AS CAUSE OF ACUTE GASTRO-INTESTINAL CATARRH IN THE HUMAN BODY.² The streptococcus so commonly recognized as a disease-excitant in the human body has been found in recent times to be present in certain forms of diarrhœa. The writer had the opportunity in 1894, in Christiana, to investigate four different groups of acute gastro-intestinal catarrh, the cause of which he attributed to this micro-organism.

In the first group, eight individuals in two different families of the same street fell suddenly ill four hours after having par-

^{1, 2} Translated for the Journal by Frank H. Miller, V.S., Royal Veterinary University, Berlin, Germany.

taken of milk. Those of the families who had either not used the milk or had partaken of it in a boiled state remained healthy, with the exception of one child, which had taken boiled milk and sickened, but only slightly. The appearance of the milk showed nothing abnormal, but it coagulated on boiling and showed large numbers of micrococci, particularly streptococci, indistinguishable from streptococcus pyogenes longus. This discovery led to the suspicion that the milk had been contaminated by the admixture of milk from cattle suffering from udder-inflammation of suppurative character. This was substantiated by Veterinarian Kolderup, who found a cow suffering from parenchymatous mastitis and concomitant diarrhoea. The milk of this animal, which had been diseased for about two weeks had been withheld from the rest until the day in question, when, a new attendant came to the dairy.

The second group, consisting of five persons, was attacked with acute gastro-enteritis a couple of hours after partaking of unboiled milk, and still later more suffered. In this case also Kolderup found a cow suffering from parenchymatous mastitis, and the milk entered the general supply in the manner recorded in the first group (by changing attendant). The general macroscopical appearance of the milk was normal, but it had numerous pus-cells which *contained* streptococci.

The third group was a mother and her child, who suffered in a similar manner from the use of "raw" milk, which upon examination showed numerous diplo- and streptococci. It was thin and flocculent and contained several small clots of pus; also among the supplying herd were found two suffering from mastitis parenchymatose.

The fourth group comprised four children of the same family, who were attacked after using new milk which to all macroscopical appearance appeared healthy. Kolderup found that upon the day of their attack a cow suffering from parenchymatous mastitis had been sold from the herd whence the milk came. The attendant was sick and another person had carried out the work, and it is fair to suppose the milk of the animal was mixed with that of the healthy animals.

The writer admits his inability to carry out an examination of the excreta of any of the patients, leaving a decided gap in the evidence, but feels that the foregoing facts establish a close relation between the character of the disease and the nature of the milk-supply.—HOLST, *Trans. Zeitschrift for Meat and Milk Hygiene, Berlin.*

REPORTS OF CASES.

SOME INTERESTING CANINE CASES.

BY CECIL FRENCH, D.V.S. (MCGILL AND MUNICH),
THE WASHINGTON (D. C.) CANINE INFIRMARY.

Suppurative Metritis in a Bitch—Diplococcus Lanceolatus in Pus.

A skye-terrier bitch, of light weight, six years of age, was brought to the Infirmary with little history other than that she had always enjoyed excellent health, had been safely delivered of three litters (the last some three years ago), but for a few weeks recently had been drooping. During her periods of œstrum a flow of blood was always very apparent. I mention this point because in another more recent case (which I hope to report as soon as its microbic nature has been determined) hemorrhage was markedly concurrent with the œstrual period.

Anorexia, frequent vomiting, constipation, subnormal temperature, and quick, weak pulse were manifested. The abdomen was pendulous and on percussion exhibited evidence of the presence of a large quantity of fluid in the uterine region.

It was decided to perform the operation of hysterectomy as the only chance for cutting short the septicæmia and prolonging life. The animal, however, did not survive the operation many hours.

Both cornua of the uterus were greatly distended, having a diameter of 4.5 cm. at the widest part, and contained a thick sanguineous pus, intercommunicating, which gave off a foul odor. The lumen of the body of the organ was completely obliterated by cicatricial tissue near the os, so that the contained matter had no means of escape. The Fallopian ducts were normal, so that the condition could hardly be defined as pyosalpinx. The mucosa was extremely ulcerated and thickened, showing that the condition had been a chronic one.

Macroscopic examination of the other organs showed no signs of pyæmia.

Professor Adami, of the McGill Pathological Laboratory, very kindly supplied the microscopic features of the case. Cover-slips of the pus stained in the usual manner showed the presence of a single form of micro-organism, a diplococcus definitely encapsulated, individuals varying from almost true coccus form

to lanceolate shape, the appearance strikingly resembling that of *Diplococcus lanceolatus*, characteristic of pneumonia in man, and found also in a very large number of cases of suppurative diseases of various organs in man. Gameléia and Kinyoun, here in Washington, have both produced fibrous pneumonias in dogs by experimental inoculations (intrapulmonary) of this micro-organism. Sections of the uterine wall also showed the presence of this diplococcus.

The Breath of the Dog Injurious to Health. Dr. B., a practising physician of Washington, attributes the cause of a chronic condition of coryza, from which he formerly suffered, to inhalation of the breath of a pet dog which, to the sense of smell, was perfectly sweet.

The dog was accustomed to sleep on his bed in proximity to his head, and on awakening in the morning he would often experience a congested condition of the Schneiderian membrane, which was followed by the usual symptoms of ordinary cold in the head. One day the dog was sent away with the doctor's wife, whereupon the symptoms ceased to be manifested. Later, the gentleman rejoined his spouse, and on fraternizing with the dog under similar conditions, a return of the affection occurred. By further experiments he was convinced that the pulmonary exhalations of his dog were the sole cause of the trouble.

The case is interesting, inasmuch as it is the opinion of physiological investigators that the function of the lungs is not confined merely to the excretion of carbonic dioxide, but to the elimination of certain deleterious organic matters in highly attenuated form—that they are, in fact, important excretory glands, and that the vitiation of the atmosphere in crowded buildings is due not so much to the carbonic acid given off as to the dissemination of these poisonous ptomaines.

Foster states that an atmosphere of 1 per cent. of carbonic acid has little effect on the animal economy, whereas an atmosphere in which the carbonic acid has been raised to 1 per cent. by breathing is highly injurious.

Longevity of Skye-terriers. Mr. F. W., an engineer of this city, possesses a skye-terrier bitch that has attained the age of twenty-two years. She is still in excellent condition, and gives no promise of an early demise. A daughter of the same animal recently died aged eighteen years.

Treatment of Strychnine-poisoning by Hypodermic Injection of Chloral Hydrate. Having found the oral administration of chloral hydrate an impossibility and the rectal injection of the same drug usually too slow in action to be of any benefit in the treatment of strychnine-poisoning, I have in two recent cases administered the drug by hypodermic injection, which was followed by prompt and satisfactory results. In each case a subcutaneous abscess subsequently formed at the point of injection, but both responded to proper treatment and quickly healed.

Authorities on therapeutics teach that this drug is too irritating to be administered hypodermically. There can be no question, however, that in emergency cases it is far wiser to give it in this manner and treat the subsequent abscess than it is to risk losing a patient by consideration of instituting a superficial ailment easy of control.

ASPIRATION-PNEUMONIA FOLLOWING ABSCESS OF STENO'S DUCT.¹

BY JOHN GREER, JR.

WHILE pneumonia in the cow is a common result of the ingestion of foreign and infected particles of food and other material into the respiratory tract, yet the present instance may be of interest, not only as illustrating an unusual origin for such a disease, but as pointing the important moral that early treatment is an essential feature in any specific morbid process in the mouths of the lower animals.

It is a well-recognized fact that there exist normally in the mouth of the lower animals pathogenic bacteria which, under ordinary conditions, produce no evil effects whatever so long as the animal retains a vigorous constitution; so soon, however, as any factors succeed in lowering that vitality the greater is the liability for bacteria to invade the general system and become truly pathogenic for their host. Such, indeed, appears to have been the condition in the case herewith cited.

The subject was a three-year-old cow in which an abscess developed in Steno's duct, the infection doubtless arising through the mouth after the usual manner in which such ascending affections occur. The animal's first symptoms were

¹ Read before the Montreal Veterinary Medical Association, November, 1895.

falling off in the milk, which persisted for four days, when closer examination of the body revealed a small swelling on the left cheek. This rapidly spread downward toward the nostril, and soon infiltrated, likewise, the deeper tissues below the eye on that side; the lachrymal duct became obstructed, and the usual symptoms attending such a condition supervened. Further, there was considerable exophthalmos developed, the eye protruding from the socket to an abnormally great distance, and the conjunctiva was both injected and swollen. After several days the animal refused food, emaciated rapidly, while the swelling gradually increased in size. Hot fomentations were applied with a stimulating liniment, though with little effect. This condition persisted for about three weeks, and, actinomycosis being suspected, some of the pus was removed and examined at the McGill Pathological Laboratory for the fungus, though only with negative result. Soon the secretion of milk had almost ceased, though the condition of the animal remained about the same. At the end of about the third week signs of fever developed, and were accompanied by chills, weakened pulse, and fetid breath, depression and drowsiness, with diarrhœa. These symptoms progressively increased during the next three days, at the end of which time the animal died. This was nearly four weeks after the outset of the local symptoms.

The post-mortem showed a large abscess in Steno's duct, containing about three ounces of yellow, creamy pus, and the surrounding tissues were softened and necrosed. Multiple abscesses were present in the lungs and were surrounded by consolidated areas. Some of the abscesses were of long standing, in which the pus had dried up, and in others the pus was fresher. In all cases the suppuration was connected with the bronchi, which in many places were dilated, and thus produced bronchiectatic cavities. Here then we have a case of aspiration-pneumonia, septic germs being drawn in by inspiration from the abscess in the mouth and setting up secondary abscess in the lungs, and a consequent pneumonia. There were no other signs of septic infection to account for the condition of the lungs, and the cause of death was, therefore, wholly due to this suppurative broncho-pneumonia produced in the way above mentioned.

The case then is of no little importance, as showing the liability to grave pneumonias where an abscess in the mouth remains neglected. The local conditions of the mouth, if long

untreated, render the system liable to disease by affecting the constitution, so that a pneumonia can, with much ease, follow the aspiration of the septic germs. I feel sure that had the case been subjected to operative procedure earlier the chances for such infection would have been greatly diminished, and by a proper cleansing of the mouth after operation the animal could have made a fair recovery.

In conclusion I beg to thank Dr. Martin, of McGill Pathological Laboratory, for the kindly interest he has taken in this case.

EMBOLISM OF THE AORTA.

BY DR. OTTO NOACK,
READING, PA.

A **SORREL** mare, belonging to H. K. Getz, was brought to me for examination December 26, 1895. By outward appearance I could not detect any symptoms of disease. The owner stated that whenever the mare was driven, no matter how slowly, she would sweat profusely, walk lame, and then begin to stagger. I then made an examination of the mare while standing. Mucous membrane of nose and eyes very pale, beating of heart feeble, regurgitation of blood into the heart could be heard. The heart-sounds were irregular and scarcely audible; pulse feeble, but could be distinctly felt. I then ordered the horse to be hitched to a buggy to see the different symptoms when driven. The first four blocks the mare trotted all right, showing nothing unusual, then suddenly a peculiar symptom could be seen. The tail got stiff and twisted in a peculiar manner. She ceased trotting and walked very slowly, then ceased altogether. The muscles in the hind-legs were contracted as if in cramps. These symptoms disappeared after a lapse of several minutes, beginning to walk again, sweating profusely, but then the hind-part staggered so severely that I was compelled to halt. Breathing was very difficult and accelerated; head, fore, and middle part of the body were covered with perspiration; not a drop of sweat on the hind-part could be seen, these symptoms showing that the circulation in the end-part of the aorta and femoral arteries was greatly interrupted.

Diagnosis: Heart-failure and embolismus of the aorta. *Prog-*

nosis: Very grave. I advised the best would be to kill the mare. Gave her chloroform, and dissected her the same day, December 28, 1895.

Autopsy: Upon opening the abdominal cavity nothing abnormal could be seen. After removing the intestines a fibroid tumor the size of a fist was located right in front of the left kidney, hanging on the peritoneum. The kidneys were enlarged, the color being of a very dark brown, and, by cutting, the glomeruli could be recognized. The liver was greatly enlarged, rims swollen, and very dark. The spleen was also enlarged. Upon opening the breast-cavity the smell of chloroform could be noticed. The pericardium contained a serous liquor. The heart was very large and heavy, weighing twenty-three and a half pounds; the heart-muscle was soft and relaxed, also hypertrophied. The left ventricle contained a yellowish gelatinous mass, this being fibrinous. The heart muscle was a pale gray. Then I cut the aorta posterior out, and upon opening the same it contained fibrinous embolus, commencing from the arteriæ renales and filling up the whole end-part of the aorta and femoral arteries, over three inches long and three-quarters of an inch in diameter.

Anatomical Diagnosis: Tumor fibrosus in cavitate abdominali, nephritis parenchymatosa, hepatitis, intumescencia lienis, pericarditis, myocarditis et myositis parenchymatosa, dilatatio et hypertrophia cordis, embolismus aortæ posterioris.

A COW WITH CHRONIC COUGH THAT DID NOT REACT AFTER REPEATED INJECTIONS OF TUBERCULIN.

BY LOUIS OLRV LUSSEN, V.M.D.,
ARDMORE, PA.

THE mother of the cow above mentioned, some six years ago, developed a persistent bronchial cough that would not respond to treatment. She was then carrying the heifer (her first calf). I became alarmed at this condition of the mother and told the owner of my suspicions, but, as she was milking well, delayed the execution for four years—at which time she was tested with tuberculin and gave a reaction of $2\frac{3}{4}^{\circ}$ F. The daughter about this time also developed a cough similar to the mother. She

was also tested at this time (about two years ago), but only reacted about $\frac{2}{3}^{\circ}$ F., her normal temperature being about 102° F. My client decided to kill the mother but *not* the daughter. The autopsy revealed right lung entirely hepatized over mass of cheesy degeneration, with cavities here and there containing pus, air entirely occluded; left lung, anterior lobe one large cavity containing about one quart of pus; medium lobe, tubercles and small abscess, entirely hepatized; posterior lobe containing some tubercles in the first stages. The pleura and entire thoracic cavity literally covered with tubercles, with some on the omentum. If I remember correctly, the liver contained two or three large tubercles. As will be seen from result of autopsy the animal was doing all her oxygenating through the posterior lobe of left lung, but was in fair condition and milking some six or eight quarts daily.

After result of autopsy above noted, and considering that the daughter had been for six years the constant companion of the mother, continually breathing the same atmosphere, I concluded that she also must be tuberculous, but the owner, a physician of prominence, stood loyally by tuberculin and refused to have her killed. About the middle of February of this year I was again requested to test her, and before and after injection the temperature registered 102° F. Fifteen hours after the introduction of tuberculin the temperature had dropped to 101° F., and at twenty-one hours had gotten back to 102° F. Ten days later I made another injection of a new invoice of tuberculin, and this time the temperature was the same, 102° F.; before six hours later had dropped $\frac{3}{4}^{\circ}$ F., and fell until at the twentieth hour registered 2° below temperature taken before injection. At the twenty-sixth hour temperature had gotten back to $101\frac{1}{2}^{\circ}$ F. A few days later I destroyed the suspect. Autopsy did not reveal the slightest sign of tuberculosis in any of the organs, but the large and small bronchi in both lungs contained finely masticated food, in some cases packed in the bronchi very tightly, dry, and hard, occluding the air; in other, and most particularly the larger, tubes, looser and mixed with pus, and every evidence of chronic bronchitis, ever irritated by this foreign substance.

From the facts noted I am impressed with the idea that tuberculin has an antifebrile action in cases where there is febrile condition without the presence of tuberculosis, and, further, a sedative action upon the lungs; as this subject was always easier for several days after the injection, and, still further, that the

introduction of tuberculin into the bovine species is perfectly harmless unless tuberculosis is already present, even though the subject was carried by a tuberculous mother; and, in conclusion, that tuberculin is an infallible test.

TRAUMATIC VENTRAL HERNIA.



THE above illustration is of a case coming under the observation of Dr. Joseph M. Good, of Chattanooga, Tenn.; the subject

a mule, and the hernia of special interest, owing to its size and the fact that the animal lived for a period of fifteen days, when it was destroyed.

A MISPLACED MOLAR.

BY W. J. MARTIN, V.S.,
KANKAKEE, ILL.

TIME, September, 1894; subject bay mare, seven years old, presenting a running sore at the base of right ear from time of being colt.

Operation. Mare was cast; the parts being washed, a round hard tumor could be felt at the antero-internal base of the ear. A straight incision of two inches in length was made over the tumor and carried down upon it; pressure of the fingers was then applied, and there came out a good representation of a molar tooth, somewhat necrosed around the fang portion.

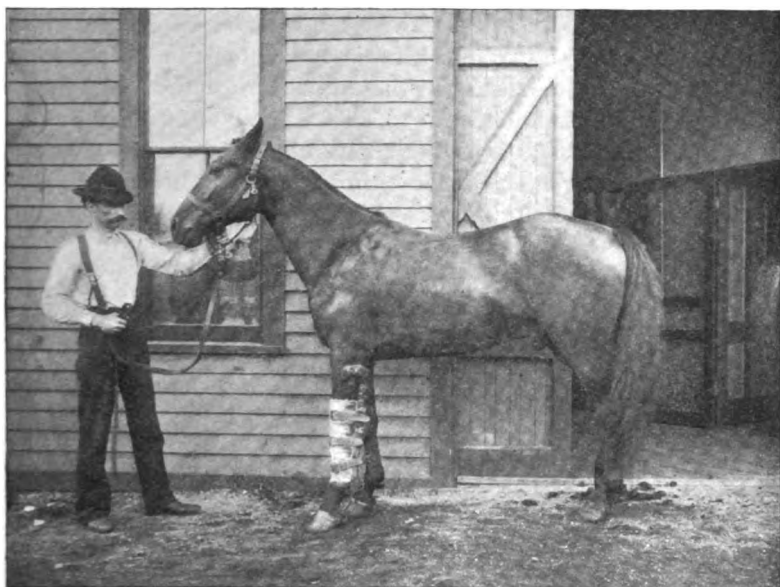
This is the second instance met with in my practice of a similar condition in the same position; the first case in a young colt but a few weeks old, and was recorded in this JOURNAL of August, 1890. This latter one was adherent to the skull, and bone-forceps was used in extracting it. In both instances the flow of pus from the openings was copious.

FRACTURE OF THE TRAPEZIUM.

BY JOHN WENDE, V.S.,
BUFFALO, N. Y.

AUGUST 10, 1895, I was called to attend a high-stepping carriage-horse owned by Mr. G. E. Drullard, of this city. Upon arriving at the stable the coachman informed me that the horse had run away that morning, and as he turned into the street, which was paved with asphalt and slippery at the time, he fell and was thrown against a stepping-stone on the opposite curb. Upon regaining his feet he was unable to pursue his frantic course on account of his inability to use his left foreleg. He was returned to his stable on three legs, where I saw him, holding his injured limb in a semiflexed position with toe resting on the floor, unable to bear any weight whatever upon it. Flexing the leg caused no inconvenience or pain, whereas extending it would cause him to rear upon his hind legs instantly.

Upon examination I found fracture of the trapezium. Applied cooling lotions to parts to prevent and keep down swelling, and had the patient removed to my infirmary per ambulance. Having no literature in my possession to which I could refer for a method of treatment in this case, I was forced to tax my own resources in every procedure. My first aim was to immobilize the injured member, which I did successfully with the assistance of Dr. F. A. Crandall, of this city. We first applied sheet cotton-batting, over which we rolled a dry bandage, upon this we placed two sole-leather splints that had been previously moulded



to the limb. Over these we wound plaster-of-Paris bandages until they reached a thickness of about half an inch and extending from above the fetlock to the middle of the radius. A shoe had been previously applied to the foot with long heels welded together. The latter was bent sufficiently to elevate the posterior end about one inch from the floor, a hole was punched into the centre to receive the hook-end of an iron splint which extended up to the elbow-joint, where it was padded with felt. Three leather straps, two inches wide, running through loops on the splint, held the leg secure to the latter, as shown in cut.

The patient was placed in a sling, where he was kept until

October 8th, when splints were removed and he was walked home without any inconvenience or lameness, his exercise was gradually increased, and in three weeks he was able to do his work to the coach as well as before the accident, also without having lost any of the extremely high knee-action which he possessed before receiving the injury.

CORRESPONDENCE.

EDITOR JOURNAL OF COMPARATIVE MEDICINE, ETC.

I SEE by the columns of the March number of the JOURNAL that many States, including Illinois, have a bill in preparation to present to the members at the next term of the Legislature for veterinary legislation.

The JOURNAL at all times is deeply interested in the advancement of veterinary science, and through the columns of your able JOURNAL no doubt the veterinarians could all be stirred up to work for legislation, as in unity there is strength. The Illinois State Veterinary Medical Association has now been in existence since 1885; during that time three bills have been presented to the Legislature at Springfield. The several bills referred to have all been introduced at the request of the members of the Association. Drs. Williams, Shephard, Casewell, Withers, Hughes, Baker, Trumbower, Wilson, and others of the members have done noble and arduous work to procure veterinary legislation for this State.

Although many of the members of our Association who in the past worked so earnestly and spent their time and money for legislation have left the State, the present members of the Association will again present a bill to the Legislature at the next term in Springfield.

The membership of our Association numbers less than 100; the number of members located in Chicago, 17. That is a small percentage of veterinary surgeons, graduates of recognized veterinary colleges, practising in Chicago.

In looking over the *City Directory* I find 129 names recorded as veterinary surgeons, 50 of whom I am acquainted with and know to be graduates of recognized veterinary colleges. The McKillip Veterinary College, which opened its doors in 1894 with a three-year course of study, and has been so laudably

made mention of through your columns, fails to have one of the names of its faculty on the list of membership of our State Association.

The Chicago Police Department has 3 veterinary surgeons on its pay-roll, all graduates of recognized colleges, the names of neither appearing on the list of membership. The veterinary surgeons located at the Union Stock-yards, who are in connection with the Bureau of Animal Industry, take no interest in the Association.

You advise through the columns of your March number that the veterinary surgeons throughout the country should use their influence for the passage of the bills pending before Congress at Washington to give rank to veterinarians in the army. It behooves every veterinary surgeon in this country who has the dignity and honor of his profession at heart to become a member of the local association, so as to give more influence in their unity to any bill that is before either State or national legislative bodies.

Very respectfully yours,

R. G. WALKER, M.D.C.

CHICAGO, ILL.

REQUEST FOR IMPORTANT INFORMATION.

EDITOR JOURNAL OF COMPARATIVE MEDICINE, ETC.

FOR purpose of an extended study I request from veterinarians and others data as to habit, instinct, or intelligence of animals in health and disease, especially minor, trifling, apparently useless, nonsensical, or harmful habits. *Circular of information* will be sent, and full credit given or sender's name confidential, as preferred. Among habits desired are: Licking themselves, other animals or men; pairing and breeding habits; parturition; those connected with urine and feces (covering up, eating, etc.); disposition of feces or shells in nest; rolling on carrion; cackling (or other disturbance) after laying (does copulation follow?); eating afterbirth or young; sharing nest with or rearing young of another species with resulting modifications of instinct; hereditary transmission of peculiar traits; feigning death; "fascination;" transporting eggs or young, etc.

Answer *as fully* as possible, always stating age, sex, place, season, species, breed (pure?), and whether personally observed.

R. R. GURLEY, M.D.

CLARK UNIVERSITY, WORCESTER, MASS.

EDITORIAL.

OUR APRIL NUMBER.

IN sending forth this issue of the JOURNAL among the entire veterinary profession of North America, we present to its readers the most complete publication of its kind that has ever been issued. With one hundred and more compactly printed pages of reading matter of varied interest to each member of our calling, we hope and trust that this missionary effort will sow good seed that shall ripen in the interests of stronger, better, and higher journalism for our profession than has yet been offered to so large a class of readers.

We present in conjunction with this issue a larger number of *bona fide* pages of advertisements than has ever before been published in a single number, not one of which but what our readers will find of the highest integrity and character in business circles. Their faith in the future of the veterinary profession is best attested by their generous use of our pages in this number, and they thus contribute to veterinary journalism in seeking for their products a wider field, which we are sure will be mutually beneficial. We are grateful to our advertisers for their assistance.

To the profession that has so generously come to the support of the JOURNAL with the new year, we most heartily tender our sincere thanks and appreciation. We believe the new era of journalism in our profession is at hand, and that the increased attractions of our contemporaries, the *Review* and *Magazine*, will bring to them a more generous recognition and support, which they merit and should command. The JOURNAL has only one aim to serve, to LEAD VETERINARY JOURNALISM IN AMERICA. In the future, as in the past, no time or money will be spared to attain this end, that our profession may be made broader, better, and stronger, and fill a more exalted place in the needs of our people; where they may create for man the greatest safeguards in the pathway of our food-supply and contribute to the animal creation the tenderest care, the greatest relief from suffering, and the protection from dangers of fashion and service that an all-wise Providence has designed through the veterinary profession for their protection.

THE LINGERING EMBERS OF THE SPOILS-SYSTEM.

IF those Congressmen at Washington who have labored so hard to find some fault with and defame the good name of Secretary Morton would only point us to an administration of that department so economically and honestly administered, without any seed-scandals to explain, one could feel some tolerance for the miserable efforts to becloud the public mind and to rob the present administration of the courage and integrity Secretary Morton has exhibited in rooting out, tooth and nail, the infamous spoils-system that so long disgraced our whole governmental system, and of which the seed-scandal was only an outgrowth of this pernicious method of securing public place. If these public servants had half the zeal for our people and their own constituents that they endeavor to exhibit on our national parade-ground, the halls of Congress, they long years ago would have wiped away this wasteful and more than useless expenditure of public moneys that has brought shame and dishonor on our public servants, and exerted their influences to have this money used in providing greater safeguards for the agricultural and stock-raising industries by promptly establishing inspection of all horses sent abroad, and thus enlarge this market for a product whose price is not fixed in London for the whole world, and restore the values in our own country to a point approximating the cost of raising the stock.

ANOTHER UNSUCCESSFUL EFFORT.

OTHER pages of this issue will inform our readers of the failure to obtain successful army legislation at the hands of the present Congress. With the most thoroughly organized support through the efforts of an untiring and hard-working committee, we are forced to accept the ultimatum that no legislation can be obtained at this time that will grant rank to our members in the army. The committee has decided to allow the bill to rest in the hands of the House Military Committee whose favorable support it had commanded, and to wait until another session, when it may be enabled to obtain a greater unity of action on the part of the army officers. With the support of General Miles and Adjutant-General Ruggles to rely upon, the

committee hopes that at the next session the support of the Quartermaster-General may be obtained; and if this is accomplished, the recognition will come to our profession, with all the support and aid that is necessary to insure it the most thorough enforcement in the interests of a long-suffering and patient profession. The members of our calling, with one accord will join the JOURNAL in extending to the committee and others a grateful appreciation of their services.

VETERINARY LEGISLATION IN NEW YORK STATE.

In 1886 the initial step in veterinary legislation was taken, the first law requiring registration being passed that year. At various periods this law has been amended, and the time for registration extended until the passage, last year, of the Regents' Bill, when we thought that the possibility of further time-extension was *nil*. We were surprised not long since to find that a bill had been introduced and passed in the Assembly to permit a certain person to register within a prescribed time; and, a little later on, we were simply amazed when Mr. Harrison introduced a bill, which, if it becomes a law, will give a certain James Wixon, of Steuben County, the legal right to practise veterinary medicine and surgery as a profession.

The bill exempting veterinarians of this State from jury-duty passed some time ago, and we congratulated ourselves that we need no more be bothered by having to serve as jurors, when to our surprise we were peremptorily summoned, being told that the bill, as passed, exempted from such service all the profession of this State with the exception of New York and Kings County. This was indeed discouraging. On making further inquiries we found that the Act, as passed, was an amendment to another law that exempted medical men in all the counties but New York and Kings, but, unfortunately, this omission was not discovered until too late. This, of course, necessitated the preparation and introduction of another bill, exempting us from jury-duty in the two counties mentioned.

With the jury, registration-extension, and the James Wixon special bill hung up in committee, we must say that at present the veterinary legislation of New York State is in a deplorable condition.

The Jury Bill should become a law, and we admonish every practitioner to use his personal influence in the furtherance of the same; but still, rather than permit the two last-mentioned bills to become laws, we could cheerfully endure the inconvenience, loss of time, etc., by having to serve as jurors.

What right has James Wixon, or any other man, to ask for legislation to qualify him legally, when we have the Regents' law, which gives him an opportunity either to register by affidavit or pass the examination? If too obstinate to register within the time limited he does not deserve to be allowed to practise; if too ignorant to pass the Regents' examination he is not a fit subject to enter the ranks of the veterinary profession, and, to say the least, would be an imposition on the public.

THE PROFESSION'S INTERESTS, ABOVE THE INDIVIDUAL.

THE subject of higher veterinary education in America is too grave and serious a one to draw down to the level of personalities. It is above any individual, and the part one plays in aiding its accomplishment can only be the discharge of one's duty as a member of his adopted profession. One's duty lies not in tearing down what has already been achieved, even though it has not been fashioned by his own plans, but commands one and all to smooth off the rough edges and direct the chief purposes of such a movement in the highest channels it deserves. One's responsibilities in this course are always to be measured by his place in the profession, and when filling high offices as directors of schools, or the higher offices of association circles, the more lofty and responsible the place the more heavily freighted are the shoulders that accept such duties. Veterinary education has progressed faster and better in America in the past ten years than at any other period, and stronger than any other profession. We lay no special claim to having aided this grand movement beyond the discharge of our duty as we interpreted it. That it has not grown stronger and more rapidly lies only with those who, not by precept but by example, have more than once checked its forward career, and for this they must some day answer. There will be no turning backward, for the sun has forever set for short-term curriculums, and a

failure to realize the needs of the hour will only leave memories behind of those who sought to lead, but failed in the final test. Upward, onward, will be the alluring attraction of the Association of Faculties that has given so great an impetus to this movement. The common purpose, the single desire, the bond of fellowship in this great work, will yield the best results and faithfully discharge every responsibility that such places of honor and trust command.

UNDER the head of correspondence will be found a letter from Illinois, fruitful in thought and quite equally forceful in many other States. It well accounts for the lack of successful legislation of importance to the well-being of the veterinarian in that as well as other States. The need of more thorough work in the strengthening of association circles and the closer unity of efforts centrally directed are strongly pointed out. In these trying days when so many are tempted to wander away from the true fold and turn their steps into devious pathways of dishonor to our profession, and imposing upon the public by false and misleading statements, nostrums, and proprietary remedies of more than questionable value, we could cry aloud unto them: "Oh! that you would exhaust such efforts in endeavoring to raise up the standard of your calling to the higher plane that she so well deserves, and give such influences as you are wasting on selfish ends to agitating for better veterinary sanitary laws and the creation of a veterinary sanitary police, by which there would be little to-day to complain of in the lessened demand for veterinary service."

THE many friends of Dr. T. J. Turner, of Glasgow, Missouri, will regret to learn that, at the expiration of his term in December last as State Veterinarian of Missouri, he failed to be re-appointed. Faithful in all his duties as a public servant, and never so well equipped as at this time, after a number of years of valuable experience, it would seem that in these trying times a State properly alive to its own interests would not wish to lose so valuable a servant, when his service and experience could so ill be spared. When will the great body of our intelligent people cease to worship at the altar of so-called practical politics, the infamous and pernicious spoils-system, that stops

not, in its bold demands at the question of the nation's, State's, or city's peril, or where is so directly involved the health and happiness of our people, so much conserved by faithful servants in positions of this kind?

THE JOURNAL is in receipt of several communications from the Toronto Veterinary College bearing upon the subject-matter of an editorial in the February number. In a letter from Prof. Duncan we learn that the alleged incident of Thanksgiving Day was greatly exaggerated, and from Prof. Smith a statement signed by his class representatives that the most agreeable and pleasant relations exist between the American and Canadian students.

The information published in the JOURNAL was received from a number of sources, and verified as far as possible through graduates of that school. We trust that in the future when the public press contains reports of this and of any similar nature the JOURNAL may at once be furnished with a statement from the college or the association involved, and that letters sent to the parent by her children seeking information will not go unanswered.

THE JOURNAL congratulates the *American Veterinary Review* on its added strength through the association therewith in joint-ownership and editorial direction of Prof. Roscoe R. Bell, of Brooklyn. With this infusion of new blood we bespeak for the *Review* a wider range of usefulness, an added power in educational channels, and a strengthening of veterinary journalism for the great work before it. The March number of the *Review*, with the wealth of "Chit-chat," was one of the most attractive numbers for several years.

TEN years ago the writer urged upon his fellow-alumni the crying need of their taking a stronger interest in matters-political, that while thus becoming more useful citizens, better veterinarians, they would become a factor in moulding legislation which to-day presses upon them with so much force, and which finds our profession as a body so illy equipped to guide and direct our people in matters that demand immediate settlement, and which must come through legislative bodies.

THE half-million dollars lost by the State of Delaware in the last ten years, from the ravages of cerebro-spinal meningitis among her horses, wisely expended would have reared for that State the most complete veterinary sanitary police in existence, and left a large balance in the possession of her people, through saving measures that would have been adopted by such a guard, and no doubt would have contributed to our whole country beneficent measures that would have added millions to the wealth of our people on whom these serious losses have fallen.

THE temper and position of the veterinary profession of to-day on the subject of higher veterinary education is well shown in this number under the head of Legislation, taken from the records of the present session of the Legislature of Manitoba, and we ask the question, "How much longer will the short-term schools continue in the face of public opinion so strongly set against them? Why will they not bend, rather than be broken? Do they not realize how narrow the field of their sustenance daily grows?" These conditions must sooner or later be answered, and soon at the latest.

THE following letter was recently received by the President of the Pennsylvania State Veterinary Medical Association, and needs no comment for the dire need of a State Board of Examiners in the Keystone State. The writer of the letter is a graduate of one of the leading veterinary colleges of the United States:

Mr. W. H. Ridge, Yours Recd This Date and will Say in Reply Do Not Care For the Extra \$3 00 only you Should Have Informed Me If the Doos Was \$2.00 Instead of \$1.00. In Regards Too The Attending whos Business Is It whither I am Present or Not. The Meetings Cannot Be verry Interesting when Their is Not a Corum Present. you Spoke of Colecting Perhaps you will. I Am No Thief Nor a Bumm, & People Do Not Have to Place accounts that I Owe in a Collectors Hands. This Is all I Have to Say If you will Ensure Me of My Name Being Erased From The Roll For All Time I will Send you a Cheque For \$6.00 as I Have Never Attended The Meetings & Never will. you Claim Too Do So Much For The Profession Then Have a Law Passed that a Graduate Must Pass a Examination Before a Board of Just ordinary Practitioners An Insult too Eny and All College Faculties & Surely an Injustice too Many a yong Man who Has Spent Perhaps the Last \$ For an Education, & Then Allow Non Graduates & Dude Graduates That Could Not Tell A Horse from A Cow if The Cow was Dehorned.

THE JOURNAL regrets exceedingly to learn of the impaired health of our esteemed colleague, Dr. J. H. Wattles, of Kansas City. The work and zeal of Dr. Wattles are too well known to need any encomium from the JOURNAL. The need of more faithful members of the profession like him is so great a one that we shall most earnestly hope and wish for his early restoration to health and return to the great field of usefulness he has so well filled.

NEW PUBLICATIONS.

FLEMING'S VETERINARY OBSTETRICS. Second edition. From J. A. Carveth & Co., Toronto, Canada. Price, \$5.50. The reaching of a second edition of this valuable work is the best commendation of its worth and the great need of such a text-book in the advancing profession of veterinary science. We shall not indulge in the disposition of some critics as to how completely original this work may be, for in such a great undertaking, dealing with fixed and well-grounded deductions in many directions, there must be of necessity great similarity; suffice it to say on this point that the growth of veterinary obstetrical science in English-speaking countries has been wonderfully aided and advanced through the first edition of this work. As a contributor to English veterinary literature, Prof. Fleming needs no introduction, for the wealth of good things from his pen is appreciated by all. The typographical work is well done, and much of the matter and illustrations in the fore-part of the work are entirely new. We note the recognition of the use of impregnators in undue contraction of the os, as suggested by Dr. Lyford, of Minnesota. The value of this work will increase day by day, for the future veterinarian must be as well equipped in bovine practice as the present one is in equine and canine pathology, and the need of a thorough obstetrical knowledge is of greater moment in bovine practice than any other branch of the veterinarian's work. Every need in this direction will be conserved by a careful perusal of this work, and those who have thoroughly studied the first edition will be eager to add the second to their libraries, to gain the greatly added-to pages in the second edition.

ELECTRICITY IN ELECTRO-THERAPEUTICS. By Edwin J. Houston, Ph.D., and A. E. Kennelly, Sc.D. Published by the W. J. Johnston Company, of New York, as one of the Elementary Electro-technical Series. This is a neat little volume with an unusual amount of valuable information on this subject crowded within its pages—its purpose a highly commendable one, to offer real scientific information on this now all-important subject to the students and practitioners of medicine; offers also to the veterinarian a field of experimental study that in its already reported use by one of our Western members of the profession gives promise of filling a more important place in our measures for relief to our patients. Unfortunately this subject for many years has been in the hands of empirics and impostors who have fed upon an ignorant and gullible public that now, with a large number of highly educated practitioners pursuing its study and use, there would seem no more suitable opportunity for the issue of this work, from so eminent authors as the above, and we are sure it will meet with a generous reception.

AN ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND ALLIED SCIENCES. By George M. Gould, A.M., M.D. Published by P. Blakiston, Son & Co., 1012 Walnut Street, Philadelphia. Every possessor of one of these storehouses of knowledge wonders how it was possible for him to get along without this work, unequalled by any of its kind in the English language. Its attainment of a third edition speaks volumes for its worth; how great a need for such a work in these rapidly advancing times, and how quickly the up-to-date scholar discerns works of great merit. In opening its pages for the first time our attention was riveted on the subject of parasites, and of so much interest did we find this subject treated, to a student of comparative science, that its wealth of information seemed rather that of an encyclopædia than a dictionary. The progressive veterinarian will find it an adjunct to his library that he can no longer deny himself, and we hope that in a future edition it may extend itself to the field of the veterinarian in a collation of many terms that are purely veterinary in derivation and meaning. All who peruse its pages will acknowledge a debt of gratitude to the author for the labors entailed in its compilation.

LEGISLATION.

NEW YORK STATE VETERINARY EXAMINING BOARD.

AT the first examination in September, 1895, only one candidate presented himself, Dr. Comstock, a D.V.S. at Albany, New York. Dr. Comstock passed a brilliant examination and received the first Regents' license. Following are the questions of the second examination held in January, 1896. A number of candidates presented themselves at this examination, but the papers have not yet been made public.

Anatomy. Describe the superior maxillary bone of the horse. Describe the frontal bone of the ox. Describe the bones of the hock. Describe a lumbar vertebra. Describe the nuchal ligament. Describe the biceps muscle (coraco-radialis) of the horse. Describe the superficial flexor of the phalanges (perforatus) of the horse. Describe the flexor muscle of the metatarsus. Describe the pharynx of the horse. Describe the stomachs of the ox. Describe the kidneys of the horse. Describe the auriculo-ventricular valves of the heart. Describe the urethra of the horse. Describe the testicles of the bull. Describe the cerebellum of the horse.

Surgery. Give the terminations of inflammation. Give the symptoms of obstruction of the duct of Stenson. Name the tissues cut in bleeding from the jugular vein at the upper third of the neck, middle third, and lower third. Describe the operation of puncture of the cæcum. Give the symptoms and pathology of strain of the flexor pedis tendons. Give the pathology and prognosis of ring-bone. Give the structures involved in fistula of the withers. Give the pathology of thrush. Describe the operation of docking (amputation of tail). Give the treatment of articular synovitis of fetlock (anterior wind-galls). Give the treatment of spavin. Give the diagnostic symptoms of navicular disease. Give the treatment of luxation of the patella. What hobbles should be used and what precautions should be taken to prevent fracture of the back? Describe the process of the healing of wounds (cicatriztion).

Physiology and Hygiene. Give the two classes of organic food substances and state the principal use of each. Name *five* principal substances found in blood. State fully the functions of the blood. Give the normal pulse of the horse, ox, sheep, dog, cat, respectively. What are the differential features of digestion in the horse and in the ox? What are the principal inorganic substances used as food? Explain the use of *two* of these substances. What is *glycogen* and what organ elaborates it? Give the process of digestion in the stomach and in the intestines. Give in brief the physiology of the secretion of urine; of saliva. State the specific gravity of each. Describe the circulation of the blood. Explain *three* ways in which waste matter is excreted from the system. Define *voluntary muscle*, *involuntary*

muscle, the phenomenon of irritability. State briefly the functions of the spinal cord. Name the centres in the medulla. State the functions of the fourth, fifth, tenth, and twelfth cranial nerves, respectively.

Chemistry. What acid contains chlorine as an important element? What is *organic chemistry*? What is the composition of the atmosphere? Of what are the common forms of urinary calculi (in the horse) composed? What is *albumin*? Mention a substance containing albumin (*a*) as a liquid, (*b*) as a solid. What is an *alkaloid*? Mention *three* well-known alkaloids. What is *glycerin*? Give its chemical properties. How is it obtained? Describe a test for arsenic. What chemical change takes place in the air when inhaled? Describe a test for sugar in the urine. Mention the antidotes that should be prescribed in cases of poisoning from (*a*) caustic alkalies, (*b*) carbolic acid, (*c*) opium. Describe a test for albumin in the urine. What is *oxygen*? How is it obtained? Give the formula and the name of the most common salt of sodium. What is *boracic acid*? How is it obtained.

Obstetrics. What are the four chief functions of the generative system of mammals? Name some of the causes of sterility in the mare and in the cow. Describe the placenta of the cow, mare, bitch. Give the symptoms and treatment of persistence of urachus. What is persistence of the urachus? Is it more frequent in solipeds than in ruminants? Give the symptoms and treatment of paraplegia in the cow. Give the symptoms and course of parturition in the mare and in the cow. Give the symptoms, causes, and treatment of retained placenta. Give the symptoms and treatment of post-partum hemorrhage. Describe metrotomy in the mare. Give the symptoms, causes, and treatment of leucorrhœa in the mare and in the cow. Describe the pelvis of the mare. Give the causes, symptoms, and treatment of umbilical hernia. Give the treatment of hock presentation. Give the symptoms and treatment of œdema of the umbilicus.

Pathology, Diagnosis, and Practice. Give the causes, symptoms, and treatment of hæmoglobinuria in the horse. State the pathology of leucocythæmia. What are its symptoms? State the relative susceptibility to suppuratation of the different genera of domestic animals. What are the symptoms of verminous colic in the horse? Describe the means of prevention and method of treatment. What animals suffer from thrush in the mouth? State the cause of this and give the treatment for it. Give the causes, symptoms, and treatment of acute rheumatism in the horse, in the ox, and in the dog. Under what conditions are gall-stones formed in domestic animals? Give the symptoms and treatment. Describe the appreciable changes in capillaries, tissue nuclei, and tissues in inflammation. What is an inflammatory *new formation*? What determines the kind of tissue formed? State the effect of a physiologic dose of mallein on a glandered horse. Describe the mode of using it. Name the usual seat of impaction of the intestine in the horse and state its diagnostic symptoms. Give a rational treatment. Give the life-history of the *tænia medio-canellata*, with symptoms, treatment, and prevention. What animals harbor the *tænia fimbriata*? Give the symptoms and treatment. Give the symptoms of hog cholera, the means of propagation and of prevention. State the diseases and lesions which in your opinion would render butcher-meat unfit for human food.

Therapeutics and Materia Medica. Describe nitrate of potash. How is

it obtained? Give its use, its action, its dose in the treatment of the horse and of the ox. Give the properties of salicylic acid. How is it obtained? Give its use, its action, its dose in the treatment of the horse, of the ox, and of the dog. Write a prescription for a cough mixture for the adult horse. What preparations of copper are used in veterinary medicine and for what purposes? What are the properties of plumbi acetat (sugar of lead)? How is it obtained? Give its action, its use, its dose in the treatment of the horse. Write a prescription for an astringent ointment containing a vegetable and a mineral ingredient. What is *oil of turpentine*? How is it obtained? Give its medicinal use and dose in the treatment of the horse and of the ox. What are *cantharides*? Where are they principally obtained and what are their active principles? Name *two* coal-tar products used to reduce temperature. What is the ordinary relative strength of a tincture to a fluidextract of the same drug? What are the medicinal uses of gentian root? Give the dose for the horse and for the ox. Define *laxative*, *saline purgative*, *drastic purgative*, *cholagogue purgative*. Give an example of each. Name *two* remedies that are commonly used to promote intestinal peristalsis. What is *Fowler's solution*? How is it prepared? Give dose for the ox, for the horse, and for the dog. Write a prescription for spasmodic colic.

The bill in the New York Legislature destined to relieve, through the Board of Regents, during a period of two months subsequent to the passage of the law, those graduates who neglected to register before the expiration of the time allowed by the act now in force in the Empire State, is reported on third reading in the lower branch as we go to press.

NEW JERSEY.

AN Act to establish a State Board of Animal Industry and to provide for the regulation, control, and suppression of contagious and infectious diseases of domestic animals, introduced by Mr. Parry, of the Senate, and referred to the Committee on Agriculture and Agricultural College:

SECTION 1. Composition of Board: President and Secretary of the State Board of Agriculture and five other members, the latter to be appointed by the President.

SEC. 2 prescribes the duties of the Board to investigate as to the existence of contagious, dangerous, or infectious diseases, provides for their suppression, and empowers them to establish quarantine measures when required; the disinfection of premises and localities.

SEC. 3 deals with the condemnation of animals and the method of appraisement; three-fourths of the appraised value will be paid by the State, based upon the actual value and condition at the times of appraise-

ment; no appraisement to exceed eighty dollars for a registered animal; forty dollars for all others.

SEC. 4 confers upon the Board the right to enter any place or premises in the performance of their duties.

SEC. 5 provides for the employment of a Secretary and other assistants and agents and the purchase of supplies, to administer oaths or affirmation to appraisers, and the power to direct such examinations into the condition of the live stock as they may deem necessary.

SEC. 6 provides for a record being kept of all expenses, and its being printed annually in the report of the State Board of Agriculture.

SEC. 7 carries with it an annual appropriation of six thousand five hundred dollars for expenses and the payment for slaughtered stock; no other compensation to be allowed the Board other than their expenses.

SECS. 8, 9, and 10 provide for audit of expenses and payment by State Treasurer, rescinding all acts or parts of acts inconsistent with this act, and that it shall take effect immediately.

The bill introduced in the House to again reopen and extend the time of registration for non-graduates was so strongly opposed by some of the leading veterinarians of the State that it failed to receive favorable consideration at the hands of the committee, and therefore did not reach the calendar.

The bill to afford cities the power to create city veterinarians by ordinance of city council was favorably reported back to the House and placed on the calendar, and it is hoped that the session will not close without its successful passage in both branches. This bill was defeated in the closing hours of the session after a heroic battle to save it.

The bill creating a State Board of Animal Industry has met with much opposition from the present Tuberculosis Commission, whose powers and authority were to be relegated to the new Bureau. Inasmuch as it failed to provide for a single representative of the veterinary profession on the same, whose qualifications are such that no properly equipped board can longer be complete without such a representative, there will be little regret if this bill fails to become a law at the present session.

The bill introduced in the Assembly looking to the creation, by ordinance of councils, of city veterinarians in the several cities in New Jersey, was defeated in the final struggle at the close of the session at Trenton. The bill looking to a reopening of the registration-books to non-graduates failed to emerge from the committee to which it was referred, and, therefore, did not become a law. The third act, taking the work of management of tuberculosis and other contagious and infectious dis-

eases among domestic animals from the Tuberculosis Commission and placing it in the hands of a State Bureau of Animal Industry to be composed wholly of the laity, failed also in passage.

PENNSYLVANIA.

THE State Board of Veterinary Medical Examiners beg leave to make the following statements pertinent to the granting of license and for registration to practice veterinary medicine in this State in accordance with the Act creating this Board:

1. All practitioners legally registered and qualified in any county of this State in accordance with the Registration Act of 1889 are not amenable to this law, providing such registration was made prior to the first Monday in September, 1895.

2. Such registration in any one county is sufficient for the entire State.

3. Any person who wishes to enter upon the practice of veterinary medicine and surgery after the first Monday in September, 1895, cannot register as a qualified practitioner without passing an examination by and receiving a license from the Board, as prescribed by the Act.

4. After the first Monday in September, 1895, no prothonotary is vested with authority to register any applicant unless he be provided with a license from the Examining Board. All registrations must be made through the Board.

5. Persons from other States wishing to practice in this Commonwealth are not qualified without receiving a license from the Veterinary Board according to Section 8 of the Act.

6. Applicants receiving their degree in veterinary medicine after July 1, 1896, must be graduates of a school with a three-years' curriculum of at least six months each.

SIMON J. J. HARGER,

President.

PHILADELPHIA, December 20, 1895.

W. HORACE HOSKINS,

Secretary.

The regular meeting of the State Board of Veterinary Medical Examiners will be held at Philadelphia on the third Monday and the day following of this month. All information may be obtained by applying to the Secretary, W. Horace Hoskins, 3452 Ludlow Street, Philadelphia.

Allegheny City's council has just passed an ordinance establishing the position of city veterinarian at a salary of \$1000 per year. The mayor of Allegheny has been petitioned to remove the present head of the Board of Health, who is a layman, and appoint a competent physician for the place. This movement promises to be successful, and a department of bacteriology and other radical reform measures are under consideration.

OHIO.

The regular meetings of the State Board of Veterinary Examiners are held on the second Tuesday in April and the second Tuesday in July. The meetings this year fall on April 14th and July 14th. The meetings are held at the State Capitol at Columbus, in the Secretary of Agriculture's department, at 10 A.M. W. W. Miller succeeds Mr. Bonham in the State Board of Agriculture, and by virtue of his office is President of the Board of Examiners. Veterinarian N. B. Smith was appointed in the place of W. V. Lusk, resigned.

DISTRICT OF COLUMBIA.

The bill pending before Congress to establish a board of registration and examiners for the District is reported to be in a favorable position on the calendar and quite likely to become a law. We sincerely trust our fellow-veterinarians may be successful in their efforts, for nothing will strengthen the hands of those seeking to elevate the course of instruction in our schools more than these laws, well prepared and enforced.

NATIONAL.

CIVIL-SERVICE EXAMINATION FOR MEAT-INSPECTOR.

WRITE a letter, of not less than one hundred and twenty-five words, addressed to the United States Civil Service Commission, Washington, D. C., and briefly state your views on the general influence of the cold-storage system, on the quality, preservation, and handling of meats. Describe the alimentary canal of a cow. Define myocarditis, exostosis, ascites, and septicæmia. Give the cellular elements of the blood and their functions. In what disease is the spleen affected? Give example. What diseases cause skin-eruption? What lesions simulate tuberculosis? Name the causes of hæmoglobinuria other than infectious. Describe the condition of a slaughtered carcass of a healthy animal; of one suffering from an infectious disease; one that died a natural death. What are the products of an inflammation of a serous membrane? Under the present law what disposition is made of diseased meat?

RANK IN THE ARMY.

CHAIRMAN TURNER has found active and strong support in Virginia through the efforts of one of Virginia's veterinarians. Representative Tyler, of that State, a member of the House Military Committee, favors the passage of this measure.

Every Pennsylvania Representative in the House at Washington has been addressed in the interest of the Army Veterinary Bill by joint letters from the Presidents of the United States, Pennsylvania State and Keystone Veterinary Medical Associations, through Messrs. Hoskins, Pearson, and Hart, representing the latter Association.

Secretary Merillat, of the McKillip Veterinary College, has become an interested worker in favor of army legislation that shall place the veterinarian in his proper sphere.

The War Department has returned the Army Veterinary Bill to the House Military Committee with its approval. Adjutant-General Ruggles placed his favorable approval to the Senate Bill when received for his opinion. General Miles, on receiving the proposed Army Legislation Bill, drew up a new one, allowing one veterinary surgeon to each six troops of cavalry, and one to each six batteries of horse or light artillery. They were to be staff officers and rank as second lieutenants, to receive \$1200 per year salary, and 10 per cent. additional for each five years of service, examinations to precede each increase. This bill gave rank, privileges, allowances on retirement, pension, etc. Those in the service for fifteen years or over to be reappointed without examination. Those less than this period to pass an examination such as the Secretary of War may direct. In case of failure to pass said examination to be given three months' leave of absence and be discharged. The last clause required all horses bought or sold to be inspected by the army veterinarians. Both bills on reaching the Quartermaster-General's office met his disapproval, and he recommended the discharge of all present veterinary surgeons in the service and the employing of ten civilians by contract. The Assistant Secretary of War then took up the several recommendations and approved the Quartermaster-General's report in the face of the favorable approval of Generals Miles and Ruggles. It will be recalled that at present the purchase and sale of all horses goes through the Quartermaster-

General's office, and he may or may not request the service and opinion of the veterinarian at will.

MANITOBA.

An Act to amend "The Veterinary Association Act," No. 24.

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Manitoba, enacts as follows:

1. Paragraph (c) of Section 4 of Chapter 148 of the Revised Statutes of Manitoba is hereby repealed and the following substituted therefor:

(c) Graduates of any recognized Veterinary School or College having a regular curriculum of not less than three sessions of six months each. Nothing in this paragraph shall affect or apply to persons holding or entitled to hold diplomas or certificates deemed satisfactory under the paragraph (c) for which this paragraph has been substituted, provided that such diplomas shall have been granted prior to the year 1898.

2. This Act shall come into force on the day it is assented to. Remarks of members of the Legislature bearing upon the subject:

Mr. McNaught moved for a second reading of the bill to amend the Veterinary Association Act.

Mr. Crosby was opposed to the principles of the bill. This only served to make this incorporation the more close. He failed to see why gentlemen who may have come into the Province as graduates of two-years' colleges now wanted to keep out all but graduates of colleges with a three-year course. He wanted free trade in this as in anything else.

Mr. McNaught replied that this would protect the public by seeing that only properly qualified persons were allowed to practice. This kept out people who would collect money for services that were not worth anything.

Dr. Rutherford said that Mr. Crosby had an erroneous idea of the whole matter. By keeping the Act as it was it was not giving free trade, but in fact protecting one institution in Canada that was not giving a course of sufficient length. It was unpleasant to wash professional dirty linen in public, but he would do so. There was a gentleman in Toronto running what was called the Ontario Veterinary College, who had made half a million out of deluded youths who thought they could get a thorough

veterinary education in two short terms. The way things were carried on at Toronto was simply disgraceful. There was only one other veterinary college in Canada, that in connection with McGill College, and here, in a three-year course, Dr. McEachran had labored to keep up the standard in Canada. All the larger and better colleges in the States were adopting three- or four-year courses. Great Britain, France, and Germany had long courses, and by the amended Act men from these good colleges would be allowed to come in, while the Ontario College would no longer have the monopoly. He compared the standing of the medical and veterinary professions in Canada. A graduate of one of our medical colleges could go to England and with six months' residence and passing the necessary examinations could become a member of the Royal College of Physicians and Surgeons; but a graduate of a veterinary college had to take the matriculation examination and go through the whole course. The result of this bill would simply be that the Toronto institution would be forced to add a third year to its course.

Mr. Sirett wanted all the improperly qualified veterinarians now in the Province to go back and take more rigid examinations.

Dr. Rutherford said this was an evil time alone would cure. The bill was read and referred.

CONTROL WORK.

New York State. Important step in the Empire State. Preamble and resolutions relating to the importance of efficient measures for the suppression of tuberculosis in dairy-cattle, adopted by the Conference Committee of the State Board of Health of New York and the Board of Health of New York City.

Whereas, Tuberculosis is the most common and fatal disease occurring among the inhabitants of New York State and New York City; and, *Whereas*, Tuberculosis has been shown to be an infectious disease, and transmitted solely through direct communication from diseased animals or man to the healthy; and, *Whereas*, Tuberculosis has been proven by the investigations of the Tuberculosis Commission of the State Board of Health to be very prevalent among dairy-cattle in New York State; and, *Whereas*, There is abundant evidence that the milk of cows suffering from tubercu-

losis of different organs of the body, and particularly from tuberculosis of the mammary glands, frequently contains tubercle bacilli and is capable of producing tuberculosis in animals fed with it; and, *Whereas*, There is every reason to believe that tuberculosis in human beings, and especially in invalids, infants, and young children, is frequently caused by drinking the milk from tuberculous cows; and, *Whereas*, Experience has shown that it is possible with certainty to detect the existence of tuberculosis in cattle by the use of the tuberculin-test; and, *Whereas*, In the opinion of this Committee no subject is of greater sanitary importance than that pertaining to the suppression of tuberculosis in men and animals; and, *Whereas*, The reports of the work of the Tuberculosis Commission and the Tuberculosis Committee of the State Board of Health, made under the special appropriation for the investigation of the subject by the Legislature in 1893, 1894, and 1895, have proven and have shown that it has been successful within the limits set by meagre appropriations, and have clearly demonstrated, as has the experience in other States, that half-way measures cannot lead to the eradication of this disease, and have emphasized the absolute necessity for far more liberal appropriations for this purpose; therefore, be it *Resolved*, That, in order to secure the result already obtained and continue the work for the current fiscal year, such appropriation should, in the opinion of this Committee, be not less than \$300,000.

Signed by Daniel Lewis, President New York State Board of Health; A. H. Doty, Health Officer, Port of New York; Owen Cassidy, Member of New State Board of Health; Charles G. Wilson, President of New York City Health Board; George B. Fowler, Commissioner of Health, New York City; T. Mitchell Prudden, Consulting Bacteriologist, Health Department, New York City; Hermann M. Biggs, Director Bacteriological Laboratory, Health Department, New York City.

“Dangerous, if true.” The disposal of the famous Hawley herd of cattle to many parts of the United States, said to have taken place because the owner feared that tuberculosis would be found among others and their condemnation yield him not ten cents on a dollar of their worth, is a serious matter; and if any of these cattle were diseased, and are allowed to pass to other States and countries to spread tuberculosis, it lays a very heavy responsibility upon some of New York State's officers, and the end of this trouble may have only begun for all concerned. No State can knowingly allow any diseased animal to go to another State, from which disease and loss may become widespread as a result thereof, without being responsible.

Pennsylvania. The JOURNAL has been very kindly favored with advanced sheets of the report of State Veterinarian Pearson, which is fruitful of valuable suggestions.

After referring to the recent legislation establishing the Live-stock Sanitary Board, he refers to the gigantic figures of one hundred million dollars,

representing the live-stock industry of Pennsylvania. Attention is called to the necessity of investigation in the line of ascertaining the causes of certain diseases so disastrous to live stock, and to the science of hygiene, so ill understood, together with the care and management of animals, as of very great importance to our people. Knowledge already gained in the methods of caring for animals, in breeding, rearing, feeding, housing, and utilizing them, should be brought to the attention of those who can profit by them in these days of severe competition and small profits.

The commercial and sanitary aspect of meat- and milk-inspection are referred to, and its influence in determining their lessened consumption is brought forcibly to the minds of the producers, and the value of inspection to all concerned strongly indorsed.

Referring to glanders, and its generally well-known and appreciated danger, he calls to the attention of all the fact that this is true, is due to the widespread information upon the subject, and the need of similar knowledge as regards other equally dangerous diseases of an infectious and contagious character would work equally beneficent results.

Speaking of the losses from osteoporosis and its cause, so ill understood, with many conflicting theories of its cause, as well as its character, that it demands more careful study.

The so-called cerebro-spinal meningitis, and the great losses annually occurring therefrom, with its imperfectly-understood etiology, needs to be more thoroughly investigated under the more advanced methods and facilities of the day.

Until careful investigations are made the true cause of periodic ophthalmia will remain unknown.

The need of very thorough destruction of the carcasses of animals dying from anthrax, or their burial not less than five feet below the surface and away from water-courses or highways, is strongly adverted to. The value of vaccination where the disease prevails extensively, or where infected pasture-fields are to be used, is commended as a safeguard. The thorough disinfection of all articles, places, etc., which might have received blood-stains from diseased animals is strongly advised.

Vaccine in districts where blackleg prevails among cattle is advised.

As to Texas or Southern cattle-fever, which occasionally breaks out through some miscarriage of the very excellent regulations of the Secretary of Agriculture of the United States, should be even less under more watchful care of those interested and charged with the execution of these regulations.

Contagious abortion, another fruitful loss to cattle-owners, is referred to, and the value of thorough disinfection of the genital passages of the cow, the external genitals, and stables strongly indorsed.

Reports of contagious garget in herds are asked for, that the subject may be more thoroughly investigated.

(To be continued.)

State Veterinarian Pearson has provided for the use of the State Veterinary Sanitary Board and its agents the necessary blanks for the proper performance of the work of condemnation, appraisement, and quarantine, when the same become requisite.

In Hatboro Township, Montgomery County, six cows were condemned for tuberculosis, upon the tuberculin-test, suggested by finding a tubercular animal sold to a butcher.

The sum of ten thousand dollars has been set aside by the Auditor-General for the State Veterinary Sanitary Board for use until after the close of the fiscal year, June 1st. For the three months, March, April, and May, herds where tuberculosis may be feared or is known to exist may be examined at the expense of the State upon application of the owner, providing the latter will agree to such precautions and measures as are prescribed by the Board, to control its redevelopment, reintroduction, and perpetuation at such centres or places.

The State Live-stock Sanitary Board have had prepared for the more expeditious performance of their work a series of blanks of great value and importance. On one the cattle-owner, in requesting an examination of his herd, after discovering some evidence of disease, agrees to have the animals disposed of according to the rules and regulations of the Board, and to observe such precautions and measures to prevent reintroduction and redevelopment as it may direct. This blank furnishes the number and kind of animals in herds and how the milk is disposed of, and provides for a tuberculin-test if deemed necessary. Another form, similar in its requirements, provides for a health-certificate being furnished, after examination by an appointed representative of the Board, the owner to pay a reasonable and just charge to such representative. Inspections and tuberculin will be furnished free, if owners will agree to assist in the examinations, separate the tuberculous cattle from the herd until disposed of by this Board, disinfect and correct bad sanitary conditions, discontinue the use of milk and cream from infected cows unless boiled or heated to 185° F. and kept at this temperature for five minutes. A form for record of animals destroyed, with post-mortem lesions recorded, giving sex, age, breed, etc. Another form makes a record of the condemned ones, and provides for payment therefor. A form for report of appraisers; certificates to be furnished owner after inspection of herd, with and without tuberculin-test for tuberculosis, and reporting upon sanitary condition of dairy, stables, yards, etc. A blank for report of examining veterinarians, showing number of animals inspected, sex and age, with description

of stable, as to size, ventilation, light, drainage, arrangement of stalls, fastenings of animals, same of yard, method of watering, source of water-supply and character of the same, and location and character of milk-room. Certificate for veterinarian's report of animal or animals reported for examination. A form for report of tuberculin-test, with temperature-chart. A blank form for Secretary of Board's use in delegating directions to local veterinarians to conduct examinations.

Maine. State Veterinarian Bailey, of Maine, recently tested a herd of forty cattle in that State with tuberculin, seventeen of which responded, and on being destroyed proved tuberculous. Ten hogs on the same farm, fed with skimmed milk (the product of the farm being used for butter-making) were found tuberculous on being killed for food-purposes.

Massachusetts. Revised regulations of the Board of Health of the city of Lynn. Adopted March 2, 1896 :

Rule 35. On and after May 1, 1896, for all milk brought into or offered for sale in the city of Lynn satisfactory evidence will be required of the producer and dealer by the Board of Health that the milk has been drawn from healthy cows ; the condition of health is to be based upon results of tuberculin-test by a veterinarian who is satisfactory to the State Cattle Commission and to the Inspector of Milk for the city of Lynn. After test, each animal to have ear-tag and certificate of health. Also, that the animals used are properly fed and the premises occupied by them are in a good condition of sanitation.

Signed by William L. La Croix, W. B. Little, M.D., Charles Leighton, Board of Health.

Missouri. St. Louis is agitating the passage of a law creating a rigid inspectorship of milk and dairies. It calls for all dairies to be removed outside of the city limits.

New Jersey. A bill has been introduced in the State Legislature to establish a State Board of Animal Industry, to consist of the President and Secretary of the Board of Agriculture and five persons appointed by the President, and \$6500 annually to be appropriated for the payment for diseased animals slaughtered. Expenses of the Board to be paid by the State. The chief object is to stamp out tuberculosis.

Delaware. Of 850 cattle vaccinated as a protective measure against anthrax and returned to infected pastures, no deaths

occurred. In this State all cows reacting to the extent of eight-tenths of a degree under the tuberculin-test are isolated.

Vermont. Mr. Victor I. Spear, member of the Cattle Commission, speaking on the subject of "Disinfection of Stables" as an aid to the eradication of tuberculosis, said that the free use of a solution of bichloride of mercury over all the woodwork, after the latter had been thoroughly swept down, care being taken that no pools be left where cattle might lick the same; the use of live steam where the stable might be closed up sufficiently tight to maintain the high temperature of steam, and, as another valuable assistant, the use of sulphur fumes after closing up the barn thoroughly tight, would all prove effectual methods. Referring to the existence of tuberculosis in his own State, he said that he believed it could be thoroughly and completely eradicated, that it had been transplanted there by the introduction of diseased cattle from time to time, and had never existed there to the extent supposed or for the time some claimed; if it had, he believed that there would not be to-day a herd left in the State free from the disease.

Great Britain. A bill has been introduced in the House of Commons to amend the Diseases of Animals Act of 1894, with the object of abolishing the discretion now enjoyed by the Minister of Agriculture to admit foreign cattle and to make the present restrictions permanent.

The *Veterinary Journal*, fully alive to the needs of the hour in helping the movement to provide a pure and wholesome supply of milk to the people of Great Britain, calls for increased cleanliness in the animals used for dairy purposes; all milking to be carried on in the open air, on a concrete or a cement floor; the hands and clothing of the milkers to be clean and free from dirt of any kind; the places of the milk-vendors to be cleaned, with proper storage facilities, and counters for its dispensing tiled. All of which will come to pass soon at the latest, and why not before in the handling of this raw product, so fraught at times with dangers direct and indirect, seems in these days incomprehensible.

The Agricultural Produce Bill passed second reading in Parliament on the 18th of March, providing for the marking of foreign and colonial meat and for the registration of persons who deal in the same. One member advocated the marking of American cheese.

SOCIETY PROCEEDINGS.

U. S. V. M. A.

MEMBERS desiring to present papers before the U. S. V. M. A. at Buffalo should at once notify the Secretary, Dr. S. Stewart, Kansas City, Kan., in order that they may be assigned place in the programme, which will be issued earlier than in former years.

We publish in this number the officers, committees, secretaries, etc., so far as completed, of our national association, so that all those charged with special lines of work may find a ready reference to those from whom much will be expected at our Annual Convention at Buffalo, on September 1st, 2d, and 3d, and in conjunction therewith the New York State meeting on September 4th and 5th. In all probability the Ohio State Association will join with the National organization, with their annual gathering, having perhaps a single session of their own organization for special work of their own State. The most favorable comments from the Buffalo papers have already been accorded the Comitia Minora in selecting Buffalo as the convention city for 1896.

The Genesee Hotel has been selected by the local committee of the U. S. V. M. A. as headquarters for the members. This hotel, centrally located, has been recently entirely remodelled, and the present managers are famous for their ability as caterers to the public needs and as entertainers of large gatherings. The hotel has kindly volunteered the use of a very large room for the use of the Convention, a room used before by the State Association and Association of Faculties. Should this room not prove adequate, a room at the Buffalo University has been kindly tendered and will afford ample accommodations for all, and is quite accessible to the hotel and from the centre of the city.

Messrs. Hinkley, Wende, and Willganz have called to their aid a large auxiliary committee of local veterinarians and a number of meetings have already been held. A visit to Niagara Falls is under consideration. The banquet has been provided for and a fee within the reach of all has been fixed. A plan that has worked admirably in other conventions has been considered by the Committee of providing a mid-day luncheon, which contributes so much to prompt sessions and a goodly attendance at each roll-call.

The outlook for the most successful meeting in the history of the Association is auspicious, and that there can be no failure where such energy and zeal are displayed by a local meeting goes without saying. The Committee rightly asks for a great outpouring of the members, and the JOURNAL raises its voice in appeal and will, with each issue from now until September, keep the profession posted on all matters pertaining to the coming convention.

Officers and Committees 1895-96. President, W. Horace Hoskins, 3452 Ludlow St., Philadelphia. Vice-Presidents, F. H. Osgood, 50 Village St., Boston, Mass.; C. C. Lyford, 821 Third Ave., Minneapolis, Minn.; R. H.

Harrison, 406 Utah Ave., Atchison, Kansas. Secretary, S. Stewart, 7½ St. James St., Kansas City, Kansas. Treasurer, James L. Robertson, 409 Ninth Ave., New York City.

Comitia Minora: Chairman, W. L. Williams, Bozeman, Montana; D. E. Salmon, Bureau of Animal Industry, Washington, D. C.; Leonard Pearson, 2024 Pine St., Philadelphia; Nelson P. Hinkley, 395 Ellicott St., Buffalo, N. Y.; L. H. Howard, 67 West Newton St., Boston, Mass.; T. B. Rayner, Chestnut Hill, Philadelphia; T. J. Turner, Columbia, Mo.

Intelligence and Education: Chairman, A. W. Clement, 916 Cathedral St., Baltimore, Md.; John Faust, Poughkeepsie, N. Y.

Diseases: Chairman, S. J. J. Harger, 205 North Twentieth St., Phila., Pa.; W. B. Niles, Ames, Iowa; C. A. Cary, Auburn, Alabama; John Wende, 1593 Main St., Buffalo, N. Y.

Army Legislation: J. P. Turner, Fort Meyer, Va.; John R. Hart, 2577 Amber St., Phila.; F. H. Mackie, Fair Hill, Md.

Publication: Chairman, W. L. Williams, Bozeman, Montana; S. Stewart, Kansas City, Kansas; Nelson P. Hinkley, 395 Ellicott St., Buffalo, N. Y.

Local Committee of Arrangements: Chairman, Nelson P. Hinkley, Buffalo, N. Y.; C. J. Willganz, 215 Carolina St., Buffalo, N. Y.; John Wende, 1593 Main St., Buffalo, N. Y.

Resident State Secretaries: Alabama, C. A. Cary, Auburn; Arizona, D. Lemay, Fort Grant; Arkansas, R. R. Dinwiddie, Fayetteville; California, R. A. Archibald, San Francisco; Colorado, J. K. Thompson, Pueblo; Connecticut, R. P. Lyman, Hartford; Delaware, H. P. Eves, Wilmington; Washington, D. C., J. H. Adamson; Illinois, R. P. Steddom, Galesburg; Iowa, G. A. Johnson, Sioux City; Kansas, N. S. Mayo, Manhattan; Louisiana, W. H. Dalrymple, Baton Rouge; Maine, H. H. Choate, Lewiston; Maryland, W. C. Seigmund, Baltimore; Massachusetts, Madison Bunker, Newton; Michigan, S. Brenton, Detroit; Minnesota, M. H. Reynolds, St. Anthony Park; Missouri, J. M. Phillips, St. Louis; Montana, W. L. Williams, Bozeman; Mississippi, Tait Butler, Agricultural College; Nebraska, A. F. Peters, Agricultural Experimental Station; New Hampshire, L. Pope, Portsmouth; New Jersey, J. P. Lowe, Passaic; New York, Claude D. Morris, Pawling; North Dakota, T. D. Hinebauch, Fargo; Ohio, J. C. Meyer, Jr., Cincinnati; Pennsylvania, W. L. Rhoads, Lansdowne; Rhode Island, J. A. McLaughlin, Providence; South Carolina, Benjamin McInnes, Charleston; South Dakota, M. J. Treacy, Fort Meade; Tennessee, J. W. Schiebler, Memphis; Virginia, George C. Faville, Norfolk; Washington, S. B. Nelson, Pullman; West Virginia, L. N. Reefer, Wheeling; Wisconsin, G. Ed. Leech, Milwaukee.

NORTH DAKOTA VETERINARY MEDICAL ASSOCIATION.

THE fourth annual meeting convened December 4, 1895, at Hotel Dakota, Grand Forks. The following members responded to roll-call: Drs. Taylor, Turcot, Crewe, La Pointe, Shepperd, Hinebauch. Visitors present were Drs. Miller, O'Connor, and Graftegraph.

The morning session was taken up principally with the report of the Treasurer and Secretary and the reading of a paper by Dr. Hinebauch on "The Use of Electricity in the Practice of Veterinary Medicine and Surgery." The paper was discussed at considerable length, a number of the veterinarians present having previously assisted the writer in diagnosing several cases of difficult lameness by means of the battery.

The afternoon session was opened by the President's address, and followed by another paper on the subject of "Millet Disease in Horses." This paper was a continuation of the one presented two years previously. In the discussion which followed Dr. Turcot remarked that he had been somewhat skeptical regarding the influence of millet as a disease-producing food. He said that the evidence of the experiment, however, convinced him that millet had more or less of an influence in the producing of pathological conditions.

The society is in a very healthy condition, having now a total membership of twenty. There are but twenty-one graduated veterinarians in the State, hence we think we can boast of a larger percentage of membership than possibly any other State society.

The society congratulates itself upon being able to have a law passed at the last session of the Legislature which hereafter will practically control the practice of veterinary medicine and surgery in the State. Although the law was not all the society wished, yet it was all that we could expect to have passed. The Legislature was thoroughly canvassed as soon as it had been elected, and we could not do better than to have the present law passed.

SECTION 1615. *Qualifications of Veterinarians.* Each person practising veterinary medicine, surgery, or dentistry in any of its departments in this State shall possess the qualifications required by this article; provided that any person who has practised veterinary medicine, surgery, or dentistry as a profession in this State for three years immediately preceding the passage and approval of this article, and who shall be a citizen of the United States or shall have declared his intention to become such, shall be deemed eligible to registration, and shall receive a certificate upon presentation of a sworn affidavit and letters of recommendation from five reputable freeholders in his locality, or upon presentation of a diploma from a legally authorized veterinary school, college, or university, if made before July 1, 1895.

SEC. 1616. *Board of Examiners; How Appointed; Term.* The Governor shall appoint a Board of Examiners within thirty days after the passage of this article, to be known as the State Board of Veterinary Medical Examiners. Such Board shall consist of three practising veterinarians, who shall each be the holder of a diploma granted by a legally authorized veterinary school, college, or university, who shall hold office one for one year, one for two years, and one for three years after such appointment, or until their successors are appointed. Thereafter each year the Governor shall appoint one member of said Board to fill the vacancy occasioned by the expiration of the term of office of those previously appointed, and is further authorized to fill such vacancies as may occur.

SEC. 1617. *Organization of Board.* Said Board shall elect a President, Secretary, and Treasurer. It shall have a common seal, and the President and Secretary shall have power to administer oaths. Said Board shall hold meetings for the examination of candidates on the second Wed-

nesday of April and October of each year, and such other meetings as may be deemed necessary, at such time and place as the Board may appoint; no session to exceed two days. The Board shall issue a certificate of qualification to all applicants who shall pass the required examination, and who shall be citizens of the United States, or shall have legally declared their intention to become such, and to all applicants who are eligible to registration under Section 1615, signed by the President and Secretary of the Board. Such certificate or diploma shall be conclusive as to the right of the lawful holder of the same to practice veterinary medicine, surgery, or dentistry in this State. Said Board shall keep a record of all the proceedings thereof, and also a record or register of each applicant for a license, together with his age, name, and time spent in the study and practice of veterinary medicine, surgery, or dentistry; and, if a graduate, the name and location of the school, college, or university granting such diploma. Said books and records shall be *prima facie* evidence of all the matter therein recorded.

SEC. 1618. *Permit to Practice.* Any person wishing to practise veterinary medicine, surgery, or dentistry, who is qualified under Section 1621, may apply to the President of the Board of Examiners for a permit to practise. The President shall upon payment of five dollars, if satisfied that the applicant is qualified and a suitable person, issue to him a permit to practise until the next meeting of the Board, and such permit shall have the same force as a certificate from the Board, but shall expire upon the adjournment of the next meeting of the Board of Examiners.

SEC. 1619. *Diplomas and Certificates.* Persons presenting diplomas or certificates for registration shall pay to the Treasurer of said Board a fee of ten dollars in advance; and the fees received by said Board shall be paid over to the State Treasurer within thirty days after receipt of same. Said fees shall constitute a special fund for the payment of the expenses of said Board of Examiners. Each member of said Board shall receive from the State Treasury all necessary travelling expenses actually incurred in attending such meetings.

The Secretary of the Board shall certify to the State Auditor after each meeting of the Board the amount due each member for necessary expenses in attending such meetings, and other necessary expenses of the Board. The State Auditor shall thereupon issue his warrant on the State Treasurer for such sum, provided there has been a sufficient amount paid into the treasury in fees to redeem said warrants; but if there is not an amount equal to said certified expenses to the credit of such fund, he shall issue his warrant for the amount in the said special fund, and deficiencies in the payment of said expenses may be made up from subsequent receipts.

SEC. 1620. *Misdemeanor to Practise, etc.; When.* Any person who either: 1. Practises veterinary medicine, surgery, or dentistry in this State without compliance with the provisions of this article; or, 2. Wilfully and falsely claims or pretends to have or hold a certificate of registration issued by such Board; or, 3. Wilfully and falsely, with intent to deceive the public, claims or pretends to be a graduate of or to hold a diploma granted by a legally authorized veterinary school, college, or university, is guilty of a misdemeanor, and upon conviction is punishable by a fine of not less than fifty nor more than one hundred dollars, and in case of non-payment of such fine the person so offending shall be liable to imprisonment for a period not

exceeding six months. All fines received under this article shall be paid into the common-school fund of the county in which such conviction takes place.

SEC. 1621. *Examination.* All persons commencing the practice of veterinary medicine, surgery, or dentistry in this State after the passage and approval of this act shall be graduates of a legally authorized veterinary school, college, or university, and shall subject themselves to such examination as the Board may require.

SEC. 1622. *Certificates Recorded.* Every person holding a certificate from the Board of Examiners shall have it recorded in the office of the Register of Deeds in the county in which he resides within thirty days after the date of said certificate, and the record shall be indorsed thereon. Any person removing to another county to practise shall record within thirty days the certificate in a like manner in the county to which he removes, and the holder of the certificate shall pay to the Register of Deeds a fee of one dollar for making the record.

SEC. 1623. *Gratuitous Services.* Gratuitous service in cases of emergency, in the dehorning of cattle or castration of animals, shall not be construed as coming within the meaning of this article.

SEC. 1624. *Witnesses; Expert Fees.* Any person complying with the provisions of this article shall be entitled to expert fees as a witness in all civil actions relating to the veterinary profession.

FARGO, N. D.

T. D. HINEBAUCH,
Secretary.

MASSACHUSETTS VETERINARY ASSOCIATION.

THE monthly meeting of the Association was held at 19 Boylston Place, Boston, January 21, 1896, with a good attendance. Drs. Langdon Frothingham, of Boston, and A. Cannon, of Malden, were elected members. The application of Dr. J. Marshall was received. Dr. Parker read a paper on "Milk as a Factor in the Causation of Disease."¹ A general discussion followed, in which Drs. Cooper Curtice, Osgood, Burr, and McLaughlin took part.

HOWARD P. ROGERS,
Secretary.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

A REGULAR meeting was held in the Library on Thursday, January 23, 1896, Dr. Chas. McEachran presiding.

The reading of the minutes of the last meeting and the transaction of business arising out of the same being over, the report of the Experiment Committee was called for. The Chairman of the Committee reported progress, and Messrs. McCarry and Higgins were appointed to act until the next meeting.

Mr. J. A. Ness furnished an interesting case-report and exhibited a peculiar-looking specimen from the uterus of a cow. It consisted of a band of

¹ Printed in this number.

fibrous tissue about ten inches in length, the presence of which in the uterus had given rise to symptoms simulating labor-pains. Sections had been prepared and were shown under the microscope, evidencing the fact that the growth was composed of fibrous tissue only. Dr. McEachran was of the opinion that the band was a sequel of a previous parturition in which some lacerations had occurred. He had frequently found similar growths in the vagina, apparently arising from the same cause, and which were in many cases a mechanical obstruction to delivery.

Mr. J. J. McCarry read an instructive paper on "Post-mortems," describing in an entertaining manner the methods to be followed in conducting autopsies. This led to considerable discussion on the part of the members, during which were pointed out the precautions necessary when death had occurred from a disease of a contagious nature. Dr. McEachran referred to the careless and consequently unsatisfactory manner in which post-mortems are frequently conducted, and mentioned the fact that the only English work on the subject was by Dr. Clement, of the class of '83.

The essayist for the next meeting was notified, and adjournment took place.

A WELL-ATTENDED meeting was held on Thursday evening, February 6, 1896, with the President, Dr. M. C. Baker, in the chair. The minutes of the previous meeting were read and approved. The Librarian, Mr. J. A. Ness, reported the addition to the library of several new works.

Mr. Chas. H. Higgins, on behalf of the Experiment Committee, reported progress, and requested an extension of time to furnish a report, which was granted.

Mr. J. J. McCarry reported an interesting case which had recently come under his observation. The subject was a horse which, two years ago, as the result of a boiler explosion, had been blown through the doorway of a building, but at the time was not thought to have sustained any very serious injury. Shortly afterward he developed a fistula above the point of the shoulder. A seton was inserted and the animal put to pasture. For a time recovery appeared to have taken place, but later the symptoms returned, and last December an operation resulted in the removal of a rivet-head about three-quarters of an inch in diameter from under the levator humeri, where it had probably lodged at the time of the explosion. The animal made a good recovery and is now working daily.

Mr. E. H. Morris read an excellent paper on "Hemoglobinemia," which, it was stated, is not a disease of the kidney, but under the influence of various causes a secondary nephritis may accompany it. The symptoms, pathology, sequelæ, and treatment were each in turn thoroughly described. One case, that of a mule, was instanced, that was peculiar in that the muscles of the shoulder were the ones affected. The discussion following was mostly concerned with the treatment of the disease, and after further remarks by the Chairman the meeting adjourned.

A REGULAR meeting was held on Thursday, February 20, 1896, the Honorary President, Dr. D. McEachran, occupied the chair. After the roll-call and reading of the minutes of the previous meeting the Librarian reported the addition of several new works to the library.

A committee was appointed, consisting of Dr. Dawes, Messrs. Kee and Ness, to draft resolutions on the death of Dr. Donald Campbell, '82.

Mr. F. W. Kee furnished the case-report for the evening, describing a peculiar case of "Suppurative Mediastino-pericarditis in a Horse." A prolonged discussion followed on the pathology of the case, also on the general treatment of thoracic affections.

Mr. J. A. Ness read an interesting paper on "Horse-breeding," describing the selection, care, and management of breeding-animals. The relative merits of Clydes and Percherons came first under discussion, it being the consensus of opinion that the former were better adapted to the climate of this country. Dr. D. McEachran closed the discussion by an interesting historical *résumé* of the origin of the French-Canadian horse. "They are," he stated, "the descendants of French mares and Arabs or Barbs imported from the Levant by the officers stationed in the Province during its occupation by the French." After further remarks on the subject of first impregnation the meeting adjourned.

A REGULAR meeting was held on Thursday evening, March 5, 1896. There was a good attendance of members, the Second Vice-President, Mr. E. C. Thurston, occupying the chair.

After the roll-call and the reading of the minutes of the previous meeting the Secretary read a communication from Dr. A. T. Rowat, of Honolulu, on "Paracentesis Abdominis." The technique of the operation and its indications were described by the writer in a lucid and entertaining manner. He had in his own practice proved the great utility of puncturing the intestine in cases of flatulence, and attributed the unfortunate sequelæ which some practitioners ascribe to the operation as due to lack of asepsis or of delaying the operation until the case is beyond recovery. In the discussion following Drs. C. McEachran and Martin pointed out that with proper precautions the operation was not only simple, but was safe and well warranted by the good results to be obtained. Concerning peritonitis in the horse as a sequela, it was thought that the peritoneum of that animal is not so liable to inflammatory lesions following trauma or surgical interference as is generally supposed, and many instances were adduced in support of this view. A motion by Mr. Kee was unanimously carried, "that the Secretary be instructed to convey to Dr. Rowat the thanks of the Association for his communication, which is most highly appreciated, evidencing on the part of the writer the interest he maintains in the welfare of the Association."

Mr. C. H. Higgins read a case-report of "Traumatic Ventral Hernia, with Rupture of the Udder, in a Cow," that evoked further discussion on peritonitis, during which Mr. Higgins pointed out the great field, as yet untouched, for research concerning the contents of the intestinal tract of the various domestic animals from a bacteriological point of view.

Mr. S. C. Richards presented an admirably prepared paper on "Acute Specific Pleurisy in the Horse." He described the clinical history and post-mortem changes found in an animal which he recently had under his observation. In the discussion following Dr. Martin stated that, in human practice, a bacteriological examination of the pleuritic effusion was an invaluable aid in arriving at a correct diagnosis of the pathological changes present, and why should the same not be true of veterinary practice?

Mr. Higgins reported, on behalf of the Experiment Committee, that the dog from which the spleen had been removed six weeks previously had been destroyed. Beyond a chronic peritonitis at the site of the operation no other abnormalities were noted. There was no glandular enlargement of any description. Blood-counts were not made.

Mr. J. H. Patterson promised a paper on Colic for the next meeting, and adjournment took place.

HARRY H. DELL,
Secretary-Treasurer.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

THE regular meeting of the Association was held on March 3, 1896, at 9 o'clock P.M., with the President, Dr. Huidekoper, in the chair. On roll-call the following responded: Drs. Amling, Bretherton, C. C. Cattnach, J. S. Cattnach, Caulfield, Delaney, Ellis, Ferster, Farley, Foy, Giffin, Gill, Huidekoper, Hanson, Hueppe, Jackson, Loomes, Lamkin, Lellman, Mac-Kellar, Neher, O'Shea, Parsons, Ryder and Turner (25).

Board of Censors (Dr. Gill, Chairman) reported that, on account of Dr. Johnson's inability to be present at the meeting of the Board, they had concluded to postpone action on his case until the next meeting, and that in the case of Turner and Finlay the Board decided to give the parties in the case until the next meeting to produce the court records, when, if they were not produced, the case would be dropped. In the case of H. Clay Glover, for violation of the Code of Ethics, the Board decided to postpone his case (he being out of the city) until next meeting.

Dr. Lellman then read a paper on "Demodex Folliculorum and Herpes in the Dog and Leukæmia in the Cat."

Dr. O'Shea, Chairman of the Committee on Legislation, reported that the Jury Bill was doing nicely, and that the Committee had received word from the Committee on Legislation of the N. Y. S. V. M. S. to the effect that an amendment had been made to the bill, introduced by Mr. C. C. Cole, of Syracuse, allowing any graduate of a veterinary school who received his degree prior to July, 1895, to register; provided he had practised veterinary medicine in some county in the State, even though he had failed to register in his own county; and that the Committee on Legislation of the County Association suggested that the applicant in the bill referred to be asked to pay \$10 on presenting his application to register.

The Committee also suggested that they be empowered to have drawn up a bill requiring that all meat- and milk-inspectors in the State be graduates from veterinary schools. Moved and seconded that the report be accepted and the Committee empowered to act; carried.

Moved and seconded that the President appoint a committee of three to frame resolutions to the Fire, Police, Street-cleaning, and Charities and Corrections Departments, to the effect that they employ only graduates of veterinary colleges for the treatment of their stock; carried. This was also embodied in the work of the Committee on Legislation.

Committee on securing room at the Academy of Medicine (Dr. Hanson, Chairman), reported that a comfortable room, seating about forty people,

could be had for \$10 a month. After some discussion it was moved and seconded that the Association take a room. An amendment to the motion was offered, to the effect that a committee be appointed to investigate the financial condition of the Association before taking a decided step in reference to securing the room. The amendment was put before the meeting; lost. The motion was then put before the meeting; carried. It was then moved and seconded that the Committee be empowered to hire the room for the next meeting; carried. Moved by Dr. Hanson, and seconded by Dr. Neher, that a vote of thanks be extended to Dr. Gill and the members of the Faculty of the N. Y. C. V. S. for their hospitality in allowing the Association the use of their rooms in the past; carried.

Moved and seconded that the meeting adjourn; carried.

ROBT. W. ELLIS, D.V.S.,
Secretary.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THE March meeting of the Association was called to order by President John R. Hart, at 8 P.M., on the 10th inst. Coming so near the State meeting, the attendance was remarkably light; yet during the discussion on "Azoturia" many new and valuable ideas were advanced. Those present were Drs. John R. Hart, T. B. Rayner, Chas. Lintz, J. Johnston, Jas. T. McNulty, H. J. McClellan, W. H. Hoskins, W. L. Rhoads, and F. S. Allen.

The Chairman of the Legislative Committee reported that, as instructed at the last meeting, they had formulated and mailed letters to everyone whom they thought needed more urging on the bill granting rank to the army veterinarians. After this report Dr. Lintz offered a resolution extending a vote of thanks to Dr. Hoskins as Chairman of the Legislative Committee for the great amount of work done and the very creditable methods pursued.

A communication from Dr. H. B. Felton, containing his resignation from active membership in the Keystone Veterinary Medical Association, was now read. The resignation was immediately acted upon and accepted.

Dr. F. S. Allen reported three cases of azoturia, one subject having two attacks within five weeks, the recovery from the second attack being the most rapid and complete. The first was a black gelding, five years old, 16½ hands high. Given purgatives and diaphoretics; after second day began to improve; the muscular action of the near hind-limb had become inert; this was treated with liniment and friction and eventually a blister. In the treatment of the second case he used fluid-extract buchu, fluid-extract juniper, and acetate potash instead of ammonia; had very satisfactory results. After an interval of about one month this horse was taken down again; he gave him the same remedies as before in conjunction with a half-pound of bicarbonate soda every six hours. The results from this line of treatment were almost phenomenal, the recovery being made in a much shorter space of time than with the earlier treatment. Dr. Johnston said that in many such cases the characteristic urine was not albuminous, but contained an excess of salts. Dr. Allen thought the weather had a great influence, and said he found it mostly where they made a practice of feeding very heavy oats, thus saturating the

system with proteids. Dr. Hoskins spoke of noting, in several cases, that the urine, at first was straw color, and became darker and more characteristic each time it was removed. In Germany they use ice in bags of bran as a cold pack along the spine, and claim good results. This treatment has proved beneficial in a case reported by one of our local practitioners. Dr. Lintz cited two cases occurring in June, one travelling over twenty miles, and made good recovery. Dr. Johnston spoke of a case in a two-year-old trotting-bred colt; attack came on after very fast work on a very cold day; his symptoms came on gradually, but he made good recovery in five weeks.

The Secretary announced the receipt of an application from Dr. F. S. Allen for membership, which will be acted upon at the April meeting.

The Society adjourned to reconvene April 14, 1896.

W. L. RHOADS,
Secretary.

SCHUYLKILL VALLEY VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting was held on Wednesday, March 18, 1896, in the room of Common Council, City Hall, Reading. It was called to order at 1 P.M. by President Burkholder. Dr. Noack acted as Recording Secretary. At roll-call the following members responded: Drs. Burkholder, Sallade, McCarthy, Noack, Fegley, Kershner, Brackbill. The minutes of the last meeting were read and approved.

The Committee on Legislation reported as to the communication which should be brought before the councils of the different sections of counties. The members of the Society living in this section were appointed to bring the matter before the different councils and see to carrying it through.

Dr. Sallade, of the Board of Examiners, reported a case where he was asked by an attorney about the registration of a man who was for ten years practising, but did not know the law and consequently did not register. The Association instructed Dr. Sallade to answer in the negative.

On request of Dr. Sallade for support of the Board of Examiners, Dr. McCarthy made the motion that for this purpose an assessment shall be made for the prosecution of illegal practitioners as far the interests of the members of the Association are concerned. The motion was seconded and carried.

Dr. Noack's motion that he should be authorized to write to the Governor for reappointment of Dr. Sallade in the Board of Examiners was carried.

Introduction of initiation fee for new members, and also that words in the by-laws "or existing practitioners" for becoming members should be stricken out, should be brought up before next meeting, because any change of the by-laws has to be made in writing by two members before the next meeting.

The President called upon Dr. Brackbill to read his paper on "Spavin," which was ably discussed by all members present as to the different modes of treatment. In the absence of Dr. Noack, a translation of the *Revue Vétérinaire* about "Inoculation of Tuberculosis of the Gallinæ in the Mammifers" was read by Dr. Fegley. The "General Pathology of the Lymphatic

System" was the subject of the paper read by Dr. McCarthy. Programme for next meeting: Bieber, "Mange;" Moyer, "Castration;" Faughnan, "Tetanus;" Sallade, the "Social Position of the Veterinarian;" Noack, "Emphysema."

Moved to adjourn at 5.30 P.M., and to meet at Pottsville the third Wednesday in June.

OTTO NOACK,
Corresponding Secretary.

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

THE annual meeting was held in Madison, at the City Hall, Wednesday, February 5, 1896. The meeting was called to order by the President, Dr. J. P. Laws, at 1.45 P.M. The roll was then called, and the following members responded: W. G. Clark, J. R. Kelso, J. P. Laws, G. Ed. Leech, E. L. Morgenroth, E. H. Newton, C. H. Ormond, and J. F. Roub. Visitors: Drs. G. H. Fay, A. H. Hartwig, B. L. Clark, and Walter Pick.

The minutes of the last meeting were read and approved. The President, in his report, gave a brief history of the Association from the time of organization to the present date, which was interesting and instructive. The Secretary's report of accounts was read and accepted. The Treasurer's report was read and accepted.

Dr. S. G. Binger, of Browntown, Green County, was expelled from the Association under charges preferred against him at the last annual meeting.

Dr. Roub read a letter from Dr. Schmitt stating that he had fractured his hip, and could not be present. On motion, the sympathy of the Society was tendered Dr. Schmitt.

Moved by Dr. Leech, and seconded by Dr. Roub, that a resolution of regret in regard to Dr. Brauchle's death be spread upon the minutes; carried.

Applications for membership: Dr. G. H. Fay, Ripon, C.V.C., '93; Dr. A. H. Hartwig, Watertown, C.V.C., '95; Dr. B. L. Clarke, Monticello, C.V.C., '95. A short recess was taken while the Censors considered the applications. The Censors reported favorably on the applications, and it was moved and seconded that they be elected to membership; carried.

The Committee on Legislation reported in regard to the bill to regulate the practice of veterinary medicine and surgery which was before the Senate at the last session. The Committee was unable to bring sufficient influence to bear to secure the passage of the bill. On motion, the report was accepted and the Committee discharged.

On motion, the Society proceeded to the election of officers for the ensuing year. The following gentlemen were elected: Dr. G. Ed. Leech, Milwaukee, President; Dr. C. H. Ormond, Milwaukee, Vice-President; Dr. W. G. Clark, Beaver Dam, Secretary; Dr. J. P. Laws, Madison, Treasurer; Drs. A. H. Hartwig, Watertown; B. L. Clark, Monticello; and E. H. Newton, Waupun, Censors.

Moved by Dr. Leech, and seconded by Dr. Kelso, that the Society revert to new business; carried.

On motion, the Secretary was instructed to inform the Society of those who have been elected members of the Society and have not qualified. The following names were read and voted upon separately, and dropped

from the roll of the Society: Drs. F. E. Stone, S. W. Mount, J. L. Kearney, and I. Philip.

Moved and seconded, that U. S. Inspectors of the Bureau of Animal Industry be invited to attend and take part in the Association meetings.

On motion, the Society adjourned until 7.30 P.M.

Evening Session. Meeting called to order by the President at 7.30 o'clock.

The question of legislation was discussed, and it was decided to appoint a committee to draft a bill and present it before the Society at the semi-annual meeting. Drs. Leech, Clark, and Law were appointed as a Committee on Legislation.

On motion, the subject of army veterinary legislation was referred to the Committee on Legislation.

Dr. Leech introduced a resolution requesting that the Association adopt, at its next meeting, as a part of its Code of Ethics, the following: "It shall be deemed a violation of the Code of Ethics for any member of this Association to contract with or through the officers of any live-stock insurance company for the professional treatment of the members' stock so insured; but this rule shall not prevent any member from becoming the examiner of risks, and to act in the capacity of expert for the same. On motion, this was laid over until the next meeting.

Reading of essays: "Shoeing," Dr. E. L. Morgenroth; "Scientific Breeding," Dr. J. R. Kelso; "Equine Relapsing-fever," Dr. T. W. Watson; "Veterinary Meat-inspection by the State, and its Necessity," Dr. G. Ed. Leech; "Professional Ethics," Dr. J. P. Laws. The essays were well prepared, and brought out an interesting discussion. Dr. Watson was unable to attend, and his essay was read by the Secretary.

On motion, it was decided to hold the semi-annual meeting at Milwaukee, subject to the call of the Secretary.

Moved and seconded, that the balance of the special assessment remaining unpaid be remitted.

Adjournment.

W. G. CLARK, M.D.C.,
Secretary.

THE ONTARIO VETERINARY COLLEGE.

DR. EDMUND E. KING, of Toronto, gave an excellent address to the students in the lecture hall of the Ontario Veterinary College, on Thursday evening, February 20th, on the new photographic process called the "Catholic Rays." His explanation of the method, which he demonstrated by the use of apparatus, was exceedingly clear, and warmly appreciated by the students. He said that it was more correctly called the "X-rays," and that it differed from photography in representing not the image or figure itself, but its shadow; that bones within the body of a man or an animal could be readily examined by this method; and that it was without doubt destined to be of inestimable benefit to medical science in the near future. Any new investigations or discoveries that benefit human medicine will certainly prove both interesting and beneficial to the sister science.

Dr. King's lecture was listened to with marked attention, and at its close a unanimous vote of thanks was tendered him by the students.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

The fourteenth annual meeting assembled in Odd Fellows' Temple, Broad and Cherry Streets, Philadelphia, March 3d and 4th. The meeting was called to order March 3d at 10.30 A.M., President Pearson in the chair. The following members were present at the various sessions: Drs. Adams, Allen, Benner, Bridge, Butterfield, Castor, Collins, Conard, Diemer, Ferley, Fitzpatrick, Felton, Foelker, Good, Goentner, Harger, Hartman, John R. Hart, Walter Hart, Hoffman, F. F., Hoskins, Houldsworth, Jobson, Keller, Keil, Knight, Kooker, Larzelere, Lintz, Lusson, Michener, Marshall, Miller, McNulty, McClellan, Nicholson, Noack, Oyler, Pearson, G. B. Rayner, T. B. Rayner, James B. Rayner, John B. Rayner, Rechtenwald, Reinhart, Rhoads, Ridge, Ross, Salinger, Stanton, Senseman, Schreiber, Terry, Turner, Williams, Zuill. Visitors: Dr. H. P. Eves, of Delaware; Dr. W. B. Atkinson, editor and publisher of *Public Health*, Philadelphia; Dr. C. E. Magill, of New Jersey; Drs. F. C. McCurdy and J. C. McBirney, of Philadelphia; Dr. Harry B. Rayner, of Norristown, Pa.; Mr. G. H. Stokes and Mr. Teufel, of Philadelphia; and veterinary students Shaw, Land, Martien, Bertram, Mohler, Ely, Repp, Beatty, Gardiner, Jones, Lushington, Cunningham, Chesley, Weinberg, Johnson, McClure, and Kirby.

The President delivered his annual address, touching many points, more especially upon the many great changes our profession has experienced during the past year, the marvellous growth of veterinary schools, and the number of additions to our fold, the domain of the veterinarian, the value of expert veterinary advice insufficiently appreciated through lack of opportunities to draw upon the knowledge and skill of veterinarians, etc., because he has specialized to such an extent upon the diseases of the horse that his broader domain is not sufficiently recognized; he also spoke upon the growing importance of meat-, milk-, and dairy-inspection. The Chair announced that nominations and election for officers to serve for the ensuing year were in order, when the following selections were made: President, W. H. Ridge; 1st Vice-President, James B. Rayner; 2d Vice-President, J. T. McNulty; 3d Vice-President, J. T. Ferley; Treasurer, John R. Hart; Recording Secretary, W. G. Benner; Corresponding Secretary, F. S. Allen; Board of Censors, S. J. J. Harger, W. L. Zuill, W. H. Hoskins, J. C. McNeil, T. B. Rayner.

Corresponding Secretary Allen then read the following applications for membership: Drs. George B. Jobson, Charles Falconer, and A. O. Cawley. McNeil and Timberman, of the Board of Censors, being absent, the Chair appointed Drs. James B. Rayner and W. S. Kooker to fill the vacancies. A recess of fifteen minutes was taken that the Board of Censors might examine the applications. The Board being ready to report, the chairman offered a favorable recommendation of Drs. A. O. Cawley, George B. Jobson and Charles Falconer. Dr. Jobson being present was introduced by the President. He thanked the Association with a few well-chosen remarks. A motion prevailed that each applicant favorably recommended shall be elected by acclamation, which was so conducted, and Drs. Cawley, Jobson, and Falconer were elected members.

The Corresponding Secretary then made his report. It was moved and seconded that the report be accepted and filed; carried.

Dr. W. H. Hoskins announced the death of Dr. Custer, eulogizing the deceased, and moved that a committee be appointed to draft suitable resolutions; carried. Drs. Hoskins (Chairman), T. B. Rayner, and Otto Noack were appointed.

Dr. John R. Hart, Treasurer, was then called upon for a report as to the condition of the treasury, to which he responded as follows: Total receipts, \$308.53; expenses, \$195.00; balance in treasury, \$113.53. Moved and seconded that a committee be appointed to audit the accounts. The Chair appointed Drs. Zuill, Harger, and Ferley.

Under the head of unfinished business, Dr. Hoskins reported that the Committee on Resolutions had forwarded a letter to Mr. Woodring, Northampton County, but that it had not been acknowledged. Report of Committee on Resolution received and committee discharged.

Dr. Hoskins also reported the continued illness of Dr. S. E. Weber; that he was in a pitiable condition, suffering from great nervous prostration; that the contribution at last fall's meeting amounted to \$26, which he gratefully acknowledged; that he was being cared for by a kind farmer, a former client.

Dr. Harger reported a membership certificate of Dr. Charles Williams in his possession which was placed on the table for disposal. He could not recollect the cause of its being in his possession. The Chair then appointed Drs. Zuill, Harger, and Kooker to investigate the matter, with power to act.

Under new business, Dr. Ridge offered the following: *Resolved*, That Article VII., Section I, shall be altered to read: "These By-laws may be altered or amended by two-thirds of the members present at the annual meeting, provided the said alterations or amendments have been proposed in writing at a previous meeting by two members, and any article or section of these By-laws may be suspended during a single meeting by the unanimous consent of the members present, except the suspension be to vote on the alteration or amendment of the By-laws." W. H. Ridge, W. L. Zuill. Discussion followed as to the best method to be employed to collect initiation fees and dues. Dr. Hoskins moved that the Secretary comply with the report and recommendations, etc., of the Treasurer. After considerable discussion, in which several participated, the motion was carried.

At this hour, 1.15 P.M., a motion for adjournment for luncheon was entertained. After which all present repaired to higher realms through the medium of the elevator, where luncheon had been spread by the Philadelphia members. [To be concluded in the May number.]

Officers and Committees for 1896-97. President, W. H. Ridge, Trevose, Bucks Co.; First Vice-President, James B. Rayner, West Chester; Second Vice-President, James T. McNulty, 1447 South Eighth St., Philadelphia; Third Vice-President, J. T. Ferley, 1431 South Sixth St., Philadelphia; Treasurer, John R. Hart, 2577 Amber St., Philadelphia; Recording Secretary, W. G. Benner, Doylestown, Bucks Co.; Corresponding Secretary, F. S. Allen, 800 North Seventeenth St., Philadelphia.

Board of Censors: Chairman, W. H. Hoskins, 3452 Ludlow St., Philadelphia; S. J. J. Harger, Thirty-sixth and Pine Sts., Philadelphia; Wm. L.

Zuill, 857 North Broad St., Philadelphia; J. C. McNeil, 26 Fourth St., Pittsburgh; Thomas B. Rayner, Chestnut Hill, Philadelphia.

Committee on Legislation: Chairman, John R. Hart, 2577 Amber St., Philadelphia; Leonard Pearson, 2024 Pine St., Philadelphia; J. C. Foelker, 119 South Seventh St., Allentown; Jacob Helmer, Scranton; Charles T. Goentner, Bryn Mawr; S. J. J. Harger, Thirty-sixth and Pine Sts., Philadelphia; Thomas B. Rayner, Chestnut Hill, Philadelphia.

Committee on Intelligence and Education: Chairman, Wm. L. Zuill, 857 North Broad St., Philadelphia; F. S. Allen, 800 North Seventeenth St., Philadelphia; J. C. Michener, Colmar; M. J. Collins, Myerstown; Robert Gladfelter, 703 North Eleventh St., Philadelphia; J. W. Sallade, Pottsville; Charles Williams, 1321 Thompson St., Philadelphia.

Committee on Sanitary Science and Police: Chairman, Leonard Pearson, 2024 Pine St., Philadelphia; M. E. Conard, West Grove; W. H. Knight, Kennett Square; P. H. Minster, Langhorne; C. R. Good, Lock Haven; Charles Schaufli, 915 Dauphin St., Philadelphia; Otto Noack, Sixth and Cherry Sts., Reading.

County Secretaries: Allegheny, McNeil; Berks, Noack; Bucks, Turner; Chester, Conard; Crawford, McLean; Dauphin, Oyler; Delaware, Lintz; Erie, Irons; Fayette, Magee; Franklin, Jobson; Jefferson, Hoffman; Lackawanna, Helmer; Lancaster, Bachman; Lebanon, Collins; Lehigh, Foelker; Luzerne, Timberman; Lycoming, Kellar; Montgomery, Luson; Northampton, Radley; Northumberland, Cawley; Philadelphia, Felton; Schuylkill, Sallade; Susquehanna, Butterfield; Washington, McKenna; Wyoming, Stanton.

ECHOES OF THE KEYSTONE CONVENTION.

THE election of Dr. W. H. Ridge as President is a well-deserved honor, and will keep the work of the organization well in touch and progress with sister associations over the country.

The reflection of Secretaries Allen and Benners will keep well-tried men in office, and with the experience already attained through arduous labors will make the work easier for them and more effective for the Association.

Professor Zuill promises at an early date to give to the Association his well-considered views on the use of tuberculin and other agents for diagnostic purposes, as well as the dangers that may follow their use, from his point of view.

The home of Ex-Secretary Gladfelter has been gladdened by the arrival of a son, which fully accounts for the doctor's tardiness at the opening hours of the session.

The local Committee of Arrangements was somewhat alarmed at the number in attendance on the second day's session, when seventy-three presented themselves for luncheon, and only fifty-five had been provided for, but they proved equal to the emergency and saw that none went away hungry.

The introduction of a half-day's entertainment around the operating arena of the Veterinary Department of the University of Pennsylvania proved a strong drawing card.

Dr. F. F. Hoffman in exhibiting a spaying instrument fashioned after his own ideas, and constructed through his own mechanical handiwork,

demonstrated its worth and practicability by quickly and efficiently spaying a mare before those in attendance.

Ethyl chloride, a new local anæsthetic, was exhibited by member Hoskins, and a brief report of its use in three cases was given, in two of which with great satisfaction, and no retarding of the healing process subsequently; in the third case, the removal of a fibro-bony tumor from the jaw of a horse, the anæsthesia was not as complete as one would desire.

The ever-faithful Rayner family was represented each session by the five brothers, who form a very useful and strong contingent of the State Association at every call made upon them for aid and support in every direction.

Philadelphia veterinarians turned out in great strength and found a large number of those outside the city to greet them.

What occurred to Messrs. Ridge and Benner's during the night of the first day has not yet been explained; suffice it to say that their friends were alarmed the next morning when one of the morning dailies had their photographs labelled wrong. The members were somewhat relieved when, at roll-call, they both responded and appeared well physically.

It added much to the pleasure of the Convention to greet the ever-faithful members, Drs. Foelker, Rectenwald, and Reinhart. Few meetings are ever held without noting their presence.

It is to be hoped that the rigid examination of the baby member, George B. Jobson, was no factor in his reported illness before arriving home.

Ex-President Pearson was somewhat embarrassed in demonstrating the value and promptness of barium chloride as a purgative when his students submitted to him a mare that had been through the experience so often that she had become injection-proof to its actions, and very knowingly looked at him out of one corner of its eye while he impatiently waited for the profound results aforesaid described. His second subject proved more satisfactory in results, though he took the precaution to inject him outside, and someone was skeptical enough to say that a wheelbarrow had been used to convey the large amount just outside the door of the amphitheatre.

The operation of cunean tenotomy for spavin-lameness by Dr. Zuill was much admired and the dexterity of its performance commended and appreciated. Another time it is hoped that better provision may be made by which a larger proportion of those present may see the *modus operandi* of this plan of surgical treatment.

One of the principal personages announced for a place on the programme was startled to find, on the eve of leaving home for the Convention, that his dimensions physically had so increased, owing, we suppose, to the lack of exercise incident to a dull winter's professional work, that his convention clothes would not button at several important points. It is to be hoped that the spring work and summer heat will remedy this misfortune in time for our fall meeting.

Median neurotomy, by Dr. Harger, was closely watched by all those who have had such varied experience in results from this operation. With some it now holds a higher and stronger place than ever, because of less frequent unfortunate complications in the aggregate than were generally looked for and realized.

New Jersey sent but one of her representatives, Dr. W. B. E. Miller, an always strong association man. This State was close enough that distance could play but a small excuse for so few being present.

All in all, it was good to be there. None regret the efforts put forth to attend. Barring illness or death, they will all be there next year. The absent ones lost much, and from one letter received, printed on another page of this issue, we are sure that he needs to be present at every meeting.

PROCEEDINGS FOR THE YEAR 1894-95 OF THE SOCIETY FOR THE STUDY OF COMPARATIVE PSYCHOLOGY IN CONNECTION WITH THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE OF MCGILL UNIVERSITY, MONTREAL.

(Continued from page 78.)

After the reading of the minutes of the previous meeting, Dr. Mills was tendered a vote of thanks by the Society for his recent contribution to the Library.

Mr. W. K. Inglis then read a paper on "Expression of Emotion in the Lower Animals," which evidenced on the part of the writer much original thought and investigation. Darwin has described three principles which probably account for most of the expressions and gestures of the lower animals, and these were considered in order. The first principle is that of serviceable associated habits, and it was shown that when a certain state of mind is induced there is a strong tendency, through the force of habit and association, to a recurrence of that state and the performance of related movements, though they may be of no use to the animal, and thus the most complex movements can in time be performed without any effort or even consciousness. Physiology explains how this occurs, in that the conducting power of various paths is increased according to the frequency of the impulses which pass along them. Thus certain paths become associated with certain nervous impulses, and this association applies to the nerves of motion, sensation, and those connected with thinking. Some psychical change probably occurs, for the tendency to acquired habit is inherited. If one of a series of associated habitual movements be performed, the other will naturally follow. Some of these may be useless, but having originally been performed for some definite purpose under different environment they still remain. For instance, dogs frequently turn around several times and even scratch the ground before lying down, which useless habit is, no doubt, a remnant of one that was the opposite in their parents in a wild state, having for its object the making of a comfortable resting-place in the long grass. Certain mental conditions lead to certain actions, but when a directly opposite condition is induced there is a strong and involuntary tendency to the performance of actions of an entirely opposite nature. This is the second principle—that of antithesis. The development of movements under this principle are, according to Darwin, dependent upon consciousness. Certain movements have required certain sets of muscles for their performance, and movements of an opposite nature have brought other sets of muscles into play. "So strongly are our intentions and movements associated together that, if we eagerly wish for an object to move in any direction, we can hardly avoid moving our bodies

in the same direction, although we may be perfectly aware that this can have no influence." The third principle refers to actions of nervous origin, but entirely independent of the will, and, to a certain extent, of habit. The brain, under certain conditions, generates and transmits nervous impulses in certain directions in excess, depending on the connection of the nerve cells with the fibres, and, as far as the muscular system is concerned, on the nature of the movements which have been habitually practised. As examples of this principle we have trembling of the muscles, chattering of the teeth, and the regulation of the capacity of the arteries by the vaso-motor system might also be included. The means of expression in the different groups of animals was next considered. Cattle and horses seldom emit sounds when suffering pain unless it be excessive, but cows invariably bellow after their offspring is removed, and a horse will call to his mate when separated or on his return. The variety of emotions which the dog can express by sounds has been commented on by most writers on animal intelligence, and is apparent to anyone who will devote a little attention to the matter. In the pig the principle of antithesis is evidently concerned in the difference between his contented grunt after his appetite has been appeased and the terrified squeal when roughly handled. But in the lower animals the expression of emotions is accomplished for the most part by other methods than sounds. The erection of the dermal appendages, as the hair and feathers, may be characteristic of fear or anger, while the action of the tail, of the dog in particular, as an evidence of certain mental states, needs scarcely to be mentioned. The ears in many animals, especially the horse, are indicative of emotion. Horses in a wild state, when fighting, draw the ears back to prevent their being seized by their antagonist, and the habit still obtains in the domesticated animal. When pleased or interested they assume the reverse position. Cattle and sheep do not display as much emotion as horses and dogs. The paper was brought to a close by a brief reference to the importance of the subject of expressions from a comparative point of view.

A profitable discussion followed. Mr. Cutting asked, "Why do dogs roll in carrion?" In reply the President stated that some dogs will continue it after being punished, but all dogs are not equally prone to the habit. It is probably inherited from some of the early progenitors, who, having at some time killed an animal, return to the spot and roll over the carcass to associate the sensation. Mr. Baldwin suggested that the habit may have had its origin in the fact that having killed an animal the dog would roll to obtain the scent, and thus, perhaps, attract others. Mr. Zink thought it quite possible that this odor, though unpleasant to us, might be the reverse in the dog. Mr. Cleaves concurred in this opinion.

The President referred to some interesting facts concerning the psychic development of a kitten which he had had under observation since its birth.

Mr. Zink then read an article on "Animal Psychology," written by an American clergyman, and which recently appeared in the *Dog Fancier*; after which the meeting adjourned.

After the reading of the minutes of the previous meeting the President announced an addition to the Library of several valuable works on animal psychology and related subjects.

Mr. W. V. Jones read a paper on the "Evolution of Mind in the Lower Animals," in which he first directed attention to possible erroneous deductions regarding the mental processes of animals. Until recently, even among those who have adopted the theory of evolution as regards physical development, the idea has prevailed that mind is essentially a human attribute, but there is at present a growing tendency, born of scientific investigation, to apply the same natural law to psychic development. The growth of mind has been augmented and accelerated by the aid of language. The criterion of mind is consciousness as evidenced by the power of choice, that is, the performance of actions differing from those usually resulting from the same stimuli, but we also see in the lower animals and plants, and even in inanimate things, actions which almost appear to be the result of choice. Is it possible, then, to evolve anything of a psychic nature by the action of force upon matter? Are the atoms of matter inert things having nothing but the property of extension? The law of habit holds sway over the inanimate world also. Matter once acted upon by an external force reacts against a counter-force, and it is reasonable to suppose that when forming part of a tissue the atoms do not comport themselves differently. The potentiality of matter increases by virtue of its experience, and higher dominant centres become evolved, and these become subordinated to others, and we may even imagine a complete organism like the animal body having for its dominant centre the nervous system. The question arises: At what stage does consciousness make its appearance? We know that it involves a variety of stimuli, as one unvarying stimulus exhausts reactionary power. An entity must, therefore, have had sufficient experience to enable it to react against a variety of stimuli, and having arrived at this stage of differentiation it has two or more subordinate centres which respond to different stimuli, and these centres are under the influence of the dominant centre which possesses all the powers of the constituent parts, and, in addition, other powers which it has acquired by virtue of its greater experience. It is then just in this difference of power between the dominant part and the entity itself, in that it is capable, under certain stimuli, of influencing the entity in a way not in accord with its previous experience, causing rearrangement for the purpose of responding to a new stimulus, that we understand the first dawning of consciousness, and the human mind is but the topmost inflorescence of one mighty growth, whose roots, stems, and many branches are sunk in the abyss of planetary time.

(To be continued.)

COMMENCEMENT EXERCISES.

INDIANA VETERINARY COLLEGE.

THE annual commencement was held at the College Building, 24 South East Street, Indianapolis, on March 13th. Addresses to the students were delivered by W. S. Tomlin, M.D., and T. L. Armstrong, D.V.S., President.

There were short talks by all of the faculty, and a well-worded response by F. A. Muller, Ph.G., one of the graduates. The following received diplomas: F. A. Muller, Indianapolis, Ind.; H. E. Smock, Indianapolis, Ind.; Charles Regar, Silver Lake, Ind.; W. R. Ramsey, and F. Osborn. Chas. Regar was the winner of the first prize on Surgery, Lameness, and Shoeing, presented by L. A. Greiner, V.S. The first prize consisted of a surgery- and shoeing-case.

KANSAS CITY VETERINARY COLLEGE.

THE fifth annual commencement exercises were held in the Masonic Building, 912 Walnut Street, on March 19th. The address to the students was delivered by Professor Isadore Wolf. Professor Wattles delivered the diplomas and conferred the degree of D.V.S. on the following: Frank H. Ames, Waverly, Mo.; Albert A. Immel, Springfield, Mo.; William A. Cock, Clinton, Mo.; Charles F. Hickman, Galena, Kan.; Edward L. McCrea, Lamar, Mo.; Elwood J. Netherton, Gallatin, Mo.; Samuel Sheldon, Turney, Mo.; William N. Hobbs, Kensington, Kan.; James C. Keely, Waterford, Ireland.

McKILLIP VETERINARY COLLEGE.

HAVING no senior class for the present year, the closing exercises on the 25th of March consisted of addresses by members of the faculty to the students on subjects pertaining to studentship and the profession.

AMERICAN VETERINARY COLLEGE.

THE closing exercises were held at Chickering Hall, New York City, on March 25th. Out of a class of twenty-eight, two failed to pass the final examination successfully. A complete report will appear in the May number.

NEW YORK COLLEGE OF VETERINARY SURGEONS.

THE session closed on April 1st. The exercises were an innovation, consisting of a conferring of the degrees in connection with a banquet. A more complete report will appear in the May number.

THERE IS ALWAYS SOMETHING NEW.

One of Boston's leading horsewomen says that driving will grow more popular every day with the coming woman.

Examinations for meat-inspectors to the Department of Animal Industry were held in New York City on April 6, 1896.

Walrus whiskers are removed from these animals, and after drying are forwarded to China, where they are sold for use as toothpicks.

The Esquimaux give the doctor his fee as soon as he comes. If the patient recovers he keeps it, otherwise he returns it to the family.

Canine practice is booming in the city of Washington, and in these days of depressed equine returns forms a valuable contingent to veterinarians practising in large cities.

A double spleen was recently found in the carcass of a hog at one of the abattoirs in St. Louis, Mo. They were normal in size and appearance, and were connected by adipose tissue.

The Courts of Philadelphia have been asked to appoint a receiver for the Provident Mutual Live-stock Insurance Company.

The Veterinary Department of the Iowa Agricultural College, at Ames, has no less than seventeen of her graduates holding positions as instructors, inspectors, State veterinarians, etc.

The veterinarians of Allegheny County should assemble and carefully go over the list of registered veterinarians in that county, and where deaths, removals, etc., have occurred they should present to the prothonotary a properly certified list of these changes, that the register of the county be kept in accordance with the intent of the law. Many of the registries are a disgrace and a dishonor to the calling, and cast a severe reflection on the community.

Aluminum shoes grow in favor among the Russians, where experiments have been made for some time.

The canning of horse-meat at Portland, Oregon, continues to thrive. The consignment of a large number of horses from Utah is under consideration. Feeding-experiments to improve the flesh are being tried.

The January *Journal of Medicine and Science*, of Portland, Me., gives proper and just credit to Prof. Koch for the inestimable gift he has conferred upon the human race in the discovery of tuberculin, in that he has thus produced a perfect diagnostic

agent for tuberculosis in the bovine species, by which disease may thus be detected and eliminated, and directly contributing no little to man, by thus removing one of the great danger-sources.

The plans for the construction of an arena, with a seating capacity of eight to ten thousand, in a central location at Philadelphia, are nearing completion. It will be used for large indoor exhibitions, horse, dog, poultry, and pigeon shows, circus purposes, conventions, etc. A riding-school will be attached, and rings for exhibition, with bicycle races, etc. The estimated cost is a half-million of dollars.

Efforts have recently been made to resuscitate the Philadelphia Veterinary Association, which has been wholly inactive for nearly a year.

Bellevue Hospital, New York, has among her patients one Connor, suffering from anthrax, which first seemed only an abscess of the neck. He was formerly a drover, but disclaims any connection with cattle for the past three years. The suggestion is made that he may have been inoculated long ago, the germs lying dormant in his system until recently.

Harper's Weekly of February 22 has an interesting article on ponies and pony-breeding.

The sending of eight percheron stallions from Wayne, Illinois, to Belgium, looks like "sending coals to Newcastle."

The English standard of height for polo-ponies has been raised to 14.2 by the Hurlingham Club. The chief motive for increasing the height was to admit better-bred animals of thoroughbred and Arab breeding, a reason which does not hold good in America, where we use the wiry little "cow-ponies of the plains."

Paris, France, leads off in the establishment of Turkish baths for horses and dogs.

An unusually large number of special prizes are offered at the Philadelphia Kennel Show, which will tend to stimulate the rivalry for better-bred dogs of the several species.

NEW INVENTIONS.

A rubber horseshoe-pad, arranged to cover the rear part of hoof, and used with a three-quarter shoe, which is recessed into depressions in the rubber pads.

A nailless horseshoe, of usual form of construction, with metallic straps welded to outside of rear portion of the wings of the shoe, and connected with metallic braces to forward part of shoes, with a clamping-device at the ends of said straps, the latter passing through each other.

A horse-controller, consisting of a rod of metal formed with a pair of bib strap-loops, a wide U-shaped section extending forward and joining the strap-loops, and a section for adjusting extending backward and adjusted to the throat-latch.

A horse-tail tie, consisting of two lengths of coiled wire, parallel with one another, and fastened to a metal plate at one end, so arranged to receive the other end, which is made adjustable.

A device for training horse's manes, consisting of two wooden bars, with rubber facing secured by clamps, and so attached to the mane.

A toe-calk, with a vertical groove on one face from top to bottom, adapted to receive and frictionally hold a nail, securing the calk firmly during the welding to the shoe.

A horse-blanket, with adjustable breast-stays and cross-bands around the body fastened by hooks and rings.

Method for preparing a dried form of meat-extract and malt by desiccation after maceration.

An improved means of attaching snap-hooks to straps through the medium of a metal plate.

An improved horseshoe, consisting of a body of soft metal, faced for the wearing surface with a strip, and calkings of hard metal.

A powder-atomizer, consisting of a rubber bulb and a discharge-nozzle connected with an agitator-tube for the powder.

A wire tail-guard for horses.

A currycomb, consisting of a metal framework toothed on the bottom, a series of parallel bars toothed on both edges, so arranged as to revolve in the body framework.

A horseshoe, having a gripping border projecting below the main portion of ground surface of shoe.

Ligature-holder and receptacle, consisting of a glass bottle or jar with capped mouth, and a central spindle for winding upon the thread, so arranged in the jar as to be free of contact of the sides, and the spindle revolving, allowing the removal of silk or thread as required, the central spindle or cylinder being fastened by movable disks.

A device for removing feathers from fowls, the gripper revolving and opening and closing for the purpose intended.

An animal-releasing device, consisting of a slotted base-block, a locking-bar working through said block, a locking-bolt working in the base-block.

An automatic watering-trough.

A self-opening pocket-knife, by a pivoted, spring-actuated blade.

A horse-collar, consisting of a stuffed roll with metal casing, and a draft-bearing-pad separated therefrom so as to form a hame-crease; metallic casing covering partially the external surface of the pad, the portion bearing against the animal covered with a leather casing joined at its edges to the metal casing.

A knee boot-holder, consisting of a non-elastic shoulder-strap, elastic and flexible suspending loops at ends of shoulder-strap, rubber holding parts passing loosely through the loops and provided with button tabs at the ends.

A combination bridle-bit, the mouthpiece having a central arch; a spindle extending horizontally through said mouthpiece and having an arch parallel with the arch thereof and normally

resting against the cheekpieces secured to the ends of the spindles; coiled springs between ends of spindle and secured to cheek- and mouthpieces and to the driving-reins, the mouth-piece and spindle turning in opposite directions.

A horseshoeing apparatus, consisting of a frame support for a series of levers and attachments for the limbs, by which the latter are secured in suitable positions to enable the shoer to adjust more readily the shoes.

Veterinary obstetrical forceps, one of the bars having at its end a fenestrated blade, the other an upwardly curved point; the other bar an upwardly projecting ball to coact with the blade, the other end a wide curved face.

PERSONAL.

Veterinarians Pearson and Hoskins, of Philadelphia, appeared before a committee of the Massachusetts Legislature, at Boston, charged with hearing those who wished to speak relative to the bills now pending before that body looking to a reduction of the Cattle Commission or the placing of this work in the hands of local boards of health. Their voices were raised in appeal not to stay the work of this intelligent and conscientious Commission, but to strengthen it with increased power and privileges.

Prof. Roscoe R. Bell, the new associate-editor, with Prof. Liautard, on the *Review*, while not so well known among Association circles as the latter, will no doubt soon be found in the active pathway of work of our national organization, the Empire State's strong State body, and no better person could be charged with the resuscitation of that once influential and successful organization, the Long Island Veterinary Society.

Professor James L. Robertson, who has recently been seriously ill, is again back to his post of duty at the American Veterinary College, where he has for a long period of years filled so acceptably the chair of theory and practice.

Dr. W. L. Zuill, of Philadelphia, and several members of his family have recently been stricken with diphtheria.

Dr. Nelson P. Hinkley, of Buffalo, and Dr. W. L. Williams, of Bozeman, Montana, have recently been battling with attacks of the grippe.

The Buffalo master-shoers will have in their school of anatomy and horseshoeing the services of veterinarians Willganz and William Somerville.

Dr. George H. Berns, of Brooklyn, has been added to the staff of collaborateurs of the *American Veterinary Review*.

Dr. James A. Waugh, of Allegheny, is out in a recent issue of the *Humane Advocate*, of Pittsburg, with an article on "Docking of Tails of Horses and Cropping of Ears of Dogs."

The February number of the *Farm and Home*, published at Melbourne, Australia, contains a photo-engraving of W. Tyson Kendall, M.R.C.V.S., Principal of the Melbourne Veterinary College.

F. B. McCall, D.V.M., has been added to the staff of instructors connected with the Veterinary Department at Ames, as lecturer on lameness and principles of shoeing.

Dr. W. J. Hinman, of Winnipeg, Manitoba, has had added to his duties, for his city, those of meat- and food-inspector.

Dr. W. V. Lusk, of Ohio, and one of the former members of the State Board of Veterinary Medical Examiners, has accepted a post in the army service as veterinarian to the 2d Cavalry regiment of the United States Army.

Dr. George H. Bailey holds the place of veterinary editor to the *Turf, Farm, and Home*, published at Waterville, Maine.

Veterinarian Schmitt, of Dodgeville, Wisconsin, is just recovering from a painful and serious injury which has confined him to his bed for some weeks.

Veterinarian Johnson, of Moore's Station, Pennsylvania, recently met with a severe mishap, through his horse running away and throwing Mrs. Johnson and the Doctor forcibly from the carriage, injuring both, the former quite seriously.

Dr. Rush S. Huidekoper was one of the judges at the recent National Cat-show in New York City.

The *Allegheny* (Pa.) *Herald* of March 6 has a half-column of news headed "A Sensible Idea," referring to the recent appointment of Dr. J. Stewart Lacock as City Veterinarian. The city, with its \$30,000 worth of live-stock, already appreciates the value of expert advice in the selection of horses for the special services required of them and heartily approves of the new innovation.

Dr. William Dougherty, of Baltimore, in the March number of the *American Veterinary Review*, suggests a good arrangement for a frost- and ice-shoe: That the toe-calking be made with three points and the heel-calkings with two points. As these become dulled from use they can be sharpened with a file without removing from the feet.

Drs. W. L. Zuill, Leonard Pearson, and W. Horace Hoskins have been selected by Mayor Warwick, of Philadelphia, as members of a special Board of Examiners to examine applicants for the vacancy in the position of Consulting Veterinarian to the Department of Public Safety.

Dr. W. H. Dalrymple, recently of Atlanta, Georgia, has returned to Baton Rouge, Louisiana, the seat of his former field of labor.

Dr. A. W. Swedberg, recently of Richmond, Virginia, has been appointed an assistant-inspector in the Bureau of Animal Industry, and assigned to duty at St. Louis, Missouri.

Dr. S. S. Field, Jr., of New York City, is touring the country with the play entitled "The Sporting Duchess." He has the general management and direction of the unusual number of horses which make up a very attractive feature of the show.

The health of Dr. William Dougherty, of Baltimore, has been seriously impaired the past winter.

The following well-known veterinarians will officiate in the Boston Horse-show in April next: Drs. Osgood, Howard, Peters, Labaw, and Blackwood.

Dr. C. Barnwell Robinson has been appointed veterinarian to the Health Board of the District of Columbia.

Veterinarian W. T. S. Werntz is a candidate for representative honors in his district, part of West Philadelphia.

Dr. J. Stewart Lacock, of Allegheny City, Pennsylvania, has been appointed city meat- and milk-inspector at a salary of one thousand dollars per year.

Veterinarian W. L. Burt, of Providence, Rhode Island, was a recent visitor to the Buffalo horse-markets, selecting coach-horses for his clients.

Prof. R. S. Huidekoper's bull-terrier, "Cardona," won the cup given by the National Greyhound Club for the best dog of the bull-terrier class at the recent New York Kennel-Club Show.

Veterinarian George H. Bailey, of Maine, says in the *Boston Herald* of March 16 that he does not believe the trotting-horse carrying one hundred and fifty pounds on a level track will ever reach a two-minute gait.

The many friends of Dr. C. P. Lyman will be glad to know that he is again back in the harness, improved in health and bearing evidence of his old-time vigor.

Dr. W. F. Lavery, of Chillicothe, Ohio, who has been called to a position at the Veterinary Department of the Ohio State University at Columbus, Ohio, is a graduate of the Veterinary Department of that institution, class of 1890, and was a former assistant of Prof. H. J. Detmers.

Dr. Alexander Glass has been selected as veterinarian for the Philadelphia Dog-show, which will be held at Industrial Hall on the 14th, 15th, 16th, and 17th of April.

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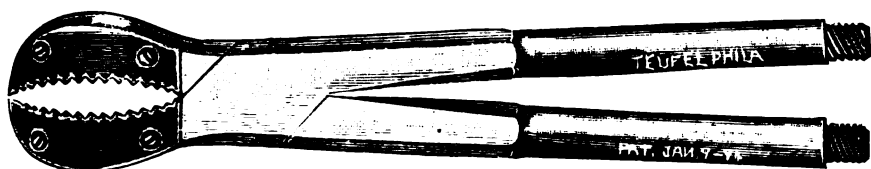
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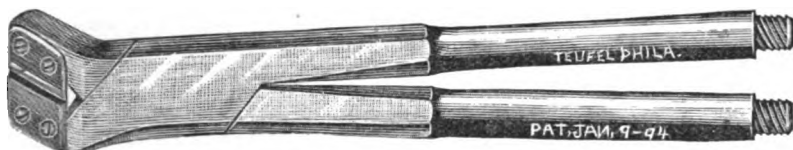
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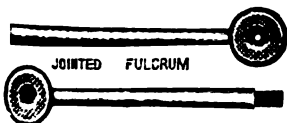
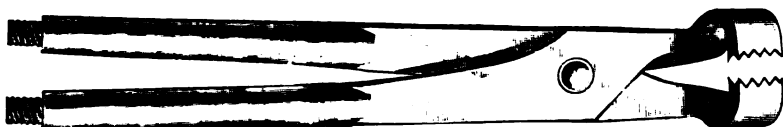
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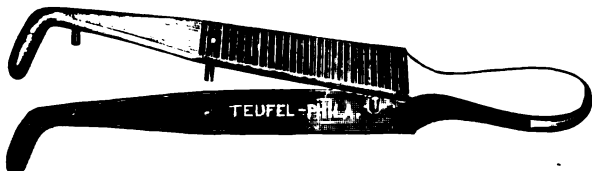
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THE JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES.

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No. 5.

VALEDICTORY ADDRESS TO THE GRADUATES IN COMPARATIVE MEDICINE AND VETERINARY SCIENCE OF MCGILL UNIVERSITY, MONTREAL.

BY WESLEY MILLS, M.A., M.D., D.V.S.,
PROFESSOR OF PHYSIOLOGY IN THE FACULTY OF HUMAN MEDICINE AND IN THE
FACULTY OF COMPARATIVE MEDICINE AND LECTURER ON CYNOLGY
IN THE LATTER FACULTY.

TO-DAY we, your teachers, congratulate you on having overcome, by your industry and perseverance, the obstacles that have been in your path during the past three years. Having now reached the goal, you may honestly rejoice, and if your bosoms swell with pride, it is, we know, a pride tempered by the conviction that the mental status to which you have attained is very far removed from that which you hope to reach by the same wise use of your powers in the years that are to come. We and you alike realize that this day marks an era. Henceforth you walk your way without any man's special guidance. You take your fates in your own hands. You are very different men, to day, from what you were three years ago. Were it not so, you would have failed to pass those examinations conducted both by your teachers and that independent board composed of practising members of your own profession, by virtue of which this University has conferred upon you the degree of Doctor of Veterinary Science.

As the choice of a calling or profession determines to a large extent the manner in which the individual shall use his powers during his whole life, it is for himself and his fellows, necessarily, one of the most important decisions of a lifetime.

In fact, it is only excelled in gravity by the choice of one's principles, and one's partner for life. The man of no fixed principles of action is like a ship without a compass or rudder; the man of bad principles is a constant menace to society. The individual who selects either profession or principles at haphazard sins against himself and his fellows; but he who chooses lightly her who is to determine the future, does so still more, for the laws of heredity are as certain and inviolable as any others, and heredity is of infinitely more importance in the large proportion of cases than environment. I hope, therefore, that this latter choice has been delayed till it can be made with an insight into the laws of Nature you once did not possess.

Probably no body of young men chooses a profession more from a love of it than students of comparative medicine. It is rare to find a candidate who is not an ardent admirer, to say the least, of some variety of our domestic animals, while many have for our dumb fellow-creatures the keenest sympathy and no mean appreciation of their natural qualities. In this they can claim affinity with some of the noblest of mankind of both sexes. It is a matter of history that not a few of the best, most highly endowed, and most distinguished of our race have recognized their fellowship with our speechless servants, pets, and friends; while wilful neglect and cruelty are certain marks of a mean and ignoble nature. The man who kicks his horse or his dog is only too prone to abuse his wife and children, or grind down his fellow-men.

But, now that you leave college halls for the larger world, the view you take of your profession, both as to what it is and what it may become, is of supreme importance.

It so happens that, just at the present time, there are, apparently, some special grounds for discouragement. The clatter of horses' feet in the streets of cities has been in no small degree replaced by the electric motor and the noiseless speeding wheel of the bicyclist, and the great horse-ranches and breeding-farms have in many cases ceased to exist; but the pork-barrel is still being filled, and butter, cheese, and milk have not been banished from our tables; people, as yet, prize woollen garments above all others; boots and shoes continue to be made from the prepared skins of our domestic animals, and all require them; the broad pastures of this great continent are dotted over with fleecy sheep, and the cattle on a thousand hills

have a utilitarian as well as a poetical significance; the hungry millions of Europe await our supplies of meat, and I only wish that we could put some into every expectant mouth.

It is scarcely likely that that animal which has played so conspicuous a part in domestic service, in the chase, in war, in romance, and on the course will cease to grace the earth and to delight mankind. I am inclined to believe, however, that the present subordination of the horse, with the consequent necessary decrease in equine medical practice, is a blessing in disguise. It has always seemed to me unfortunate, both for man and beast, that the veterinarian's education and practice were so largely confined to the horse. In reality the interests of the mass of mankind are more closely bound up with the well-being of other animals. We are all dependent on them for our necessities, even our very food; and it is becoming more and more apparent with the progress of medicine that the health of mankind is in large measure determined by that of our domestic animals. They are liable to many of the same diseases as ourselves, and that malady—plague, it might almost be called—which still carries off at least one-tenth of the whole human family is frightfully prevalent in that very class of animals on which we are most dependent, viz., the bovine species. In the domestic cow, almost a part of the family, there may lurk hidden beyond the power of detection, except by recently discovered means, the germs of that disease, tuberculosis, of all the most widespread and destructive to the human family, and from this animal, the family or dairy cow, there is now no longer any doubt that it can be, and is, conveyed to man.

The public is at last, thanks to the efforts of medical men and the diffusion of knowledge by the printing press, aroused to the gravity of the danger that menaces every family. Loving mothers and anxious fathers bending over the cradles of their sick children, with a suspicion as to the cause of the evil, and a determination as to the remedy, demand that those on whom the public responsibility rests shall see to it that milk is not only free from added water, but from deadly germs; and they are generous enough to insist that the benefits shall not be confined to their offspring, but extend to the children of the ignorant poor, who, though unaware of the cause of the dreadful scourge, none the less suffer the pangs of bereavement.

An intelligent public will see that inspection must extend to

dairies and to the cattle themselves, as well as to the milk and to the butcher's meat. There is but one class of men—veterinary surgeons—properly qualified to carry out such inspection. There should be no half-measures, no temporizing, no dallying with these most imperative reforms, in comparison with which a large proportion of the subjects that engage the attention of the representatives of the people are of trifling importance. And this is but one illustration, among many, of the relations the diseases of mankind and of the lower animals sustain to one another.

The whole science of medicine and surgery is undergoing radical changes—one might almost say, being revolutionized. The results of the noble devotion to the pursuit of knowledge, for its own sake and because of its bearing, mostly not obvious at the time, on the welfare of mankind, by the eminently gifted of different lands, well represented by the late illustrious Pasteur, are in these days being turned to practical account to ward off disease and death. Plagues such as once devastated Europe are no longer possible anywhere among civilized communities, and we have now good reason to hope that, one after another, the known infectious diseases will be prevented or overcome, both among men and beasts. And how is this being brought about? Chiefly by experiments on the lower animals. And yet we hear, in some quarters, the senseless cry of antivivisection. Experiments on the lower animals, involving as they must, in some instances, vivisection, would be well worth while, even if only his inferiors, and not man at all, were concerned. Every advance in preventive and restorative medicine benefits, or should benefit, both man and beast. It follows from all this that the scope of medicine has vastly widened; that its progress has, of late, been extremely rapid; that its powers for good are greatly enlarged; that the outlook is most hopeful, and that in all this we have reason to believe that man and beast will, alike, be participators if enlightened views as to the nature, rights, and relations of the lower animals prevail.

It must, therefore, follow, that the profession of medicine is greater in its importance to-day than ever before. The temporary subordination of the horse may prove a blessing in disguise, if the students of comparative medicine are led to devote their energies to a more thorough investigation of the nature of our other domestic animals, both in health and in disease. All

the great advances in medicine, those most affecting the financial and the domestic interests of mankind, those appealing both to the pocket and the heart, have been effected through a study of the lower animals. It is no longer possible to recognize two entirely distinct branches of the science of medicine. Medicine is, as applied to man, no longer a system of blind empiricism, nor, as applied to the lower animals, a combination of that with farriery. The barber-surgeon and the farrier are but landmarks in the history of the evolution of medicine. Gentlemen, there is but one animal kingdom, governed by the same natural laws, applicable alike to man and his fellow-creatures, lower, in some respects, in the scale, but sharing with him the liability to disease and death. If this be so, the only true best method of investigating disease, as, indeed, everything else, is the comparative method.

Comparative medicine is the medicine of the future, and the sooner that is realized the better for man as well as beast. Indeed, we now grasp that future—the present touches its skirts. Specialism, or division of labor, will be necessary, because the powers of individuals are limited. Some will elect to treat the lower animals, and some mankind, with even further subdivision; but there is only one science and art of medicine; and all the various bodies of workers in this vast field should form but different battalions of one great army fighting for the prolongation of vigorous life and the mitigation of pain in every quarter to which the power of man can reach; and heaven forbid that any erroneous notions or false pride, any mere snobbery, should stand in the way of the great objects to be attained! I recall the fact that it was on this very day of the month, seven years ago, that Dr. R. P. Howard, the late distinguished and revered dean of the faculty of human medicine, passed from the scenes of his busy life. It may not be generally known that it was one of the long-cherished hopes of his life to see established in this University a chair of comparative pathology. Nothing, to my mind, could better have demonstrated the remarkable insight of the man. He, like other great men, dreamed dreams and saw visions. When shall we behold these realized in the establishment of one great, broad school of medicine in this University, which shall exist for the purpose of investigating all forms of disease to which living things are liable—their causes, their prevention, their cure?

Gentlemen, what a great profession is yours! What grand possibilities, what a glorious outlook! How the prospect fills the mind and satisfies the idealistic longings of the enlightened and aspiring young man! I congratulate you on the choice of such a profession. I do not say that the medical is the grandest of all professions. To my mind there is no best profession, but that is best for which the man is the most perfectly suited, and there is just so much nobility in each man's career as he puts into it. But what more can you wish than to behold in your profession the possibilities of unlimited good for the whole sentient creation? Such a profession calls, however, for men of no mere smattering of knowledge, no ordinary aims, no easily satisfied ideals. Of such people there are more than enough in all the professions already. It is unnecessary to remind you that your education is but fairly begun. Take the earliest opportunity of quitting the routine of practice, and, betaking yourselves to some institution where the best men and the most perfect equipment are to be found, and again become earnest investigators, under more favorable conditions than an ordinary practice affords.

I would that I could truthfully say that we were now prepared to offer you, in a post-graduate course here at McGill, the best to be obtained in America, or in the world. I doubly wish that this were so when I call to mind the fact that the dean of this faculty of comparative medicine has given the best thirty years of his life to the struggle to maintain in Canada, and in Montreal, a high standard of veterinary education, and that, too, at a time when other schools were content with very, very much less than the Montreal Veterinary College (as it was then known) required. The present lack of suitable buildings and equipment, discouraging to all of us, must be doubly so to him. May some generous friend, grasping the conception of the importance of comparative medicine, seize the opportune moment to make for himself and this faculty a name for large and permanent usefulness.

But, gentlemen, to you, individually, let me say, men are more than means. The mind can rise above environment, and the greatest of our race have been those that did so. The book of Nature is open to you, as to others, and it is not in the power of the rich to shut it, though they can do much to make opening easier. You may not be able at first to afford many books, or

much time for elaborate investigation, but you will have daily opportunities for observation, and you can masticate well the mental food that comes to hand. Good digestion, assimilation, and growth will follow. Consort with the best in the medical profession, no matter in what direction their powers are applied. Read the soundest literature, as far as it is accessible to you, whether of the human or veterinary branch of medicine, but, above all, observe, try, test, investigate for yourselves. In that way alone will you attain to the highest, healthiest mental life. Only thus can you add to the sum of knowledge. Oh! how vast is the field, how untilled, as yet, and how few the laborers that are prepared to do the highest kind of work!

But it is not alone in connection with the higher work of the profession that opportunities of usefulness are to be found. Even the most ordinary practice offers to the veterinarian scope for bettering the condition of man and beast, and in ways somewhat different from those to which reference has already been made. To the man of means the loss of an animal may signify little more than a slight reduction in the amount of his wealth. But to the poor man, dependent on his animal for his very livelihood, its sickness must mean grave anxiety, and its death, possibly, serious embarrassment; so that it may be in your power not only to relieve the animal, but to remove a load of anxiety from the owner's mind and, perchance, to avert impending calamity.

Demand and compel adequate remuneration for your services from those who are able to pay, but refuse not the helping hand to the poor because there is no prospect of pecuniary reward. Pull the ox and the ass out of the pit, though they belong to the poor, or even to no man, so far as you may know, for by so doing you will help the helpless and minister to your own better nature.

Gentlemen, it will be your privilege to diffuse a truer knowledge of the laws of life, of the conditions that make for health and disease, to suggest methods for the improvement of the breeding and rearing of a better class of animals and to aid in the prevention of thoughtless cruelty. Allow me to express the hope that you and the other graduates in comparative medicine, who have had special training in studying the psychic nature of animals, will endeavor to interest those you may meet in this aspect of animal existence, and to help the public to

realize that those animals by which we are daily surrounded are, in reality, our fellows, with not only a like susceptibility to suffering, but with not wholly dissimilar feelings and intelligence. Even the dullest of them have more within the round of their lives than we usually realize.

But what shall we say of those more intelligent creatures, the horse and the dog? From time immemorial the dog has been, in one sense or another, the companion of man. He has, by countless thousands, been recognized as the guardian of property, the defender of women and children, the amusing pet and the ever-willing servant. He enters into our every mood and readily adapts himself to our caprices. Grateful for the smallest favors, even a kindly word, he nevertheless accepts kicks and blows, however undeserved, and loves still him who has forfeited all claim to affection. He willingly shares in his master's poverty or degradation, and when forsaken by all men he will not leave him, even though he perish in the gutter, and he will guard his outcast form till he draws his own last breath. What a rare combination of qualities in the dog! How much poorer the world would be without him! But in all our domestic animals there is much to admire, if we but properly understand them; and it does seem to be no unworthy use of time and energy to make their real nature better known.

It may be that, by such services as those to which I have been alluding, you will not put money in your purse, but you will be laying up for yourselves treasure in the heaven of your own breasts. But, gentlemen, the time would fail me to do justice to the greatness of your profession. We, your teachers, all wish you well, and what better can we desire for you than that you may be good men and true, seeing in your chosen calling and in life what is and what may be, and that, inspired by worthy ideals, you may live noble lives. Farewell.

THE STATE AND VETERINARY SCIENCE.¹

BY R. W. HICKMAN, V.M.D.

THE present relations of the State to veterinary science (and the public health, the two in so far as animal food at least is

¹ Response to toast at the banquet of the graduating class of the New York College of Veterinary Surgeons.

concerned being almost synonymous) are the outgrowth of industrial and economic interests, and exist even as they are to-day as the result of the law of self-preservation. This being the first law of nature is the one (which has, in degree) which will in a large measure act as a wholesome stimulus for a higher standard of attainment in veterinary education on the part of those engaged as well as those contemplating engaging in our noble profession.

Through enactments of various State legislatures competitive or civil-service examinations determine not only the fitness of applicants for appointment under the State government, but as to whether they are qualified to practise veterinary medicine at all within the borders of such State. Therefore the constantly increasing necessity for a more liberal, a broader, and more comprehensive education or enlightenment in every department of veterinary medical science. Frequent and disastrous outbreaks of disease in different States called for legislative enactments from an economical as well as a sanitary standpoint, and in order that such outbreaks of disease might be intelligently and profitably controlled or eradicated a staff of educated veterinarians was an inevitable necessity. Therefore, the economic and hygienic needs of the people designated the cause, while the effect has been a higher and broader plan of education in our colleges, and the result has already been decidedly salutary. I have too much sympathy for these graduates who have so patiently listened to me week after week and month after month, to burden you to-night with a lot of uninteresting data, and I imagine, judging from their examination papers, that they were not only awake but wide awake a greater part of the time. I will give you just a few salient points and only such data as may be necessary to show the beneficence of the relation of the State to veterinary science; how each is benefited by the other, or how cause and effect work together resulting in the greatest good to the people.

The first requisite in the control or eradication of disease is a knowledge of its nature and an ability to practically demonstrate such knowledge. The second requisite is legal authority to put such knowledge and ability into execution. This proposition (if accepted) establishes the relation without going further. But we have the evidence. Quite early in the nineteenth century cattle in Virginia were seized with a terribly fatal disease, the

origin of which was traced to cattle that had been driven up from the South, and it was likewise noticed that the cattle from the South which communicated the disease were not affected themselves. This mystifying procedure after importations of Southern cattle into more Northern States and the West continued from time to time to be a source of considerable loss to owners of cattle as well as a source of great anxiety and agitation in the States suffering such losses. In 1868 Illinois, Indiana, and other States, notably our own, suffered immense losses through a large shipment of Southern cattle into the great Union Stockyards at Chicago, which were distributed over Illinois and Indiana, resulting in a widespread and fatal outbreak of disease in these States, and at the same time large numbers of cattle which had been exposed to the infection died in transit to or after arriving in the New York stockyards.

At this time the Metropolitan Board of Health and the New York State Cattle Commission, not understanding the exact nature of the malady or the possible dangers to the human family, made an effort to prevent or arrest the importation of diseased cattle from the West. During the same year some valuable investigations were made by Dr. R. C. Stiles for the Metropolitan Board of Health, and by Drs. John Gamgee, John S. Billings, and Curtice for the federal government. The most valuable contribution to the subject, however, from that time to the present was the determination of the boundary line of the permanently infected district by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, which bureau was organized with the present chief at its head in 1884, to whom we are likewise indebted for our knowledge of the manner in which the disease-germ (protozoon) is transmitted, so that, to-day, without interference with the great commercial cattle-interests of the South, their sale and transportation from below the quarantine line are conducted under regulations of the government bureau and under the supervision of federal inspectors to any State in the Union or at any season of the year, with no danger of disease so long as there is a proper observance of these regulations on the part of the railroad and other transportation companies. Through the efforts of the Bureau of Animal Industry in maintaining these regulations the dissemination of the disease has been successfully prevented, and where small outbreaks have

occurred they were traceable to violations of the regulations by the railroad companies.

When, however, the magnitude of this industry is considered, the small number of cases is evidence both of the value of the determination of the quarantine line and of the efficiency of the bureau's work. As an illustration, let me tell you that I have seen in a single day over fifteen thousand Texas cattle arrive in the Union Stockyards, Chicago, everyone of which (though perfectly healthy) carrying on its body infection sufficient to infect a large herd of Northern cattle.

From February 15 to December 1, 1893, 64,184 carloads of cattle from the infected district were inspected by the inspectors of the bureau. These cars contained 1,737,380 head of cattle, which were placed in quarantine pens and kept separated from susceptible animals. This or even double the number can be handled with no resulting disease if there are no violations of the regulations by the transportation companies.

Dr. Salmon has shown that the Southern cattle-tick (*Bovophilus bovis*) is the carrier of the microorganism (*Pyrosoma bigeminum*) which causes Texas fever, and that an absence of ticks from Southern cattle or their trails entirely removes the danger of infection of Northern cattle.

Mr. Kleberg, Secretary of the Texas Live-stock Sanitary Commission, has claimed to be the inventor of a solution or bath and bath-tank, by means of which he can immerse 2000 head of cattle a day at a cost of one cent each and destroy all ticks on them without injury to the cattle. Numerous experiments have been tried at the department laboratory, but no chemical substance or compound has yet been discovered that can be used sufficiently concentrated to kill the ticks without producing great discomfort to the beasts or temporary injury to their skins. A bath that would do what Mr. Kleberg claims for his invention would remove the necessity for separating Southern from Northern cattle, as well as washing and disinfecting cars that had carried them North.

The history of contagious pleuro-pneumonia can be traced with comparative certainty back to the early part of the eighteenth century—1713 and 1714. From about 1769 we have frequent and well-authenticated accounts of its existence in various parts of Europe. During the period from 1790 to

1812 it was spread throughout a large portion of the Continent of Europe by cattle driven for the subsistence of the armies which marched and countermarched in all directions; existed in England in 1842; was introduced into the United States (Brooklyn, L. I.) in 1843; New Jersey in 1847; Massachusetts in 1859.

Massachusetts promptly commenced the work of eradication, and was successful during the period from 1860 to 1866. New York and New Jersey made an attempt at its extirpation in 1879, but failed. Previous to 1868 the disease had spread to the vicinity of Baltimore, and in 1883 was carried from there into Ohio through a purchase of Jersey cattle, and thus it was spread by the sale of cattle to Illinois, Missouri, and Kentucky in 1884. This widespread dissemination of such a dangerously contagious disease caused great alarm to the cattle-owners of the country, and when, in 1886, it was discovered in some of the large distillery stables about Chicago, and among cows pasturing on prairies in their vicinity, and reports were made of its existence in Pennsylvania, the necessity for active measures for its eradication was clearly apparent.

In 1887 Congress enlarged the appropriation available for this purpose, and gave more extended authority to the governmental department having the matter in charge, which, with the coöperation of the authorities of the several affected States, in a notably short time (characteristic of the snap and energy of the American) resulted in the complete extirpation of a plague that was menacing the great cattle-interests of our greatest of countries, the last case being destroyed in New York early in 1891 and in New Jersey in the spring of 1892. For a number of years we have had government quarantine stations, which are maintained under the regulations of the department, for the reception of cattle, sheep, and swine imported from foreign countries; thus we have and will prevent a re-introduction of the contagious pleuro-pneumonia, and have prevented the introduction of epizootic eczema, which has been so prevalent in England and on the Continent, and possibly other veritable cattle-plagues.

But no legislation has been enacted providing for the inspection of horses imported into the United States, and we have already probably received from Europe one disease which has been known to exist there since 1796, and was doubtless intro-

duced with some horses imported for breeding purposes. A number of animals were found to be infected in Illinois later, probably 200, 35 in Nebraska, and a few in South Dakota. These horses were all purchased and killed, and the expense to the government of eradicating this disease from the States named, including salaries, travelling expenses, and cost of horses, was \$5232.54. The disease is known as dourine or *maladie du coit*. The course of the malady is slow. It first appears as a local affection, and becomes generalized after a few weeks or months. Animals may live for three or four years, being capable of disseminating the contagion during all this time.

The relations of the State in the broad, as well as the limited, sense to veterinary science is of great importance and considerable development, and is annually increasing in importance and magnitude far beyond the conception of those not directly interested, and, while at this time it would be inappropriate to go into all of the details, I feel that I would not meet the expectations of my colleagues if I failed to allude in particular to some of the more important branches of the work.

As to the scientific investigations of the bureau, these have been ably and conscientiously prosecuted with results of exceeding value. Hog-cholera and swine-plague have been distinctively described and separated, the etiology of each clearly demonstrated, and a course of treatment formulated and tested, giving promising results. Actinomycosis, formerly known by veterinarians as osteosarcoma, has likewise been carefully investigated, its cause, pathological anatomy, and remedy, clearly set forth; the latter by actual and numerous tests shown to be almost a specific for the cure of this disease. The diagnostic agents of tuberculosis and glanders—*i. e.*, tuberculin and mallein—have been largely distributed from the laboratory of the bureau to State authorities, State experiment stations, and educational institutions as a means of discovering the existence of tuberculosis in milch-cows and glanders in horses. Supplies of tuberculin have been sent to the proper authorities of thirty-three States; it is now being used at the rate of 2000 injections per month, with orders on file for 1000 injections per week from one State alone, and the publications of the bureau are the most valuable reference-books in the hands of the veterinary profession to-day, as a corps of veterinary inspectors is constantly engaged in field-work (making investigations of reported out-

breaks of disease in different parts of the country, etc.), which, in addition to the inspection and post-mortem work at one hundred abattoirs and the different stockyards located in or near the large cities in various States, and the scientific investigations at the experiment stations and laboratories of the department, keep us informed of the most recent results of research in veterinary science.

MILK AS A FACTOR IN THE CAUSATION OF DISEASE.

BY JOHN M. PARKER, D.V.S.,
HAVERHILL, MASS.

(Concluded from page 258.)

SOME of the principal pathogenic microorganisms found in milk are those of tuberculosis, typhoid fever, cholera, diphtheria, scarlet fever, pus-cocci, streptococci, pneumococci, etc. The most important of these are probably the specific organisms of tuberculosis, typhoid, cholera, diphtheria, and scarlet fever. The first two have their own peculiarities, which make them specially important: Tubercle bacilli, because they are carried from the cow direct, and come into the milk, when present, by way of the udder; the typhoid fever bacilli, because they multiply rapidly in milk at ordinary temperature, so that once finding their way into milk will multiply rapidly and become a serious source of danger. As a precautionary measure, then, the greatest care should be exercised in using water for washing cans and other utensils to make sure that there is no possibility of contamination from this source.

A most interesting illustration of the way in which typhoid fever is spread by the use of infected milk is reported to have occurred at Marylebone, where a farm-hand was suffering from typhoid fever. A large number of persons taking milk from this farm became sick, the outbreak of fever following from house to house, appearing in those houses supplied from this farm, and missing the intervening houses, so that in a certain street all those families that had been in the habit of getting their milk from this farm were sick, while their neighbors escaped. A case is also reported where, after cans were thoroughly washed with soda and boiling water, they were simply rinsed out before milking with clear cold water from a well. The well

afterward proved to be infected, and a large number of persons became sick from this cause.

Cholera, scarlet fever, and diphtheria, as well as other infectious diseases may be communicated in the same way, but the immediate danger is not so great, because these organisms will not, as a rule, multiply in milk, so that there is not the same danger of the rapid spread of the disease. These organisms are all destroyed by heating to 180° F.

The bacillus of tuberculosis stands in a class by itself, both because of its special characteristics and because of the amount of work that has been done on the subject. The greatest diversity of opinion prevails as to the danger of tuberculosis from the use of milk. What, then, are the facts in the case?

We find, to begin with, that deaths from consumption are steadily decreasing. In Massachusetts the percentage of deaths for each 1000 of population from 1883 to 1893, inclusive, has fallen from 31.6 per cent. to 22.7 per cent. In New Hampshire, also, the statistics show a gradual falling off in the number of deaths from phthisis pulmonalis. The same decrease appears to a marked degree in Great Britain. This decrease, of course, has nothing to do with the use of milk, but is due to an increased knowledge of the subject and to improved sanitary conditions generally.

A great deal has been said and written on the question of the infectiousness of milk when the udder is not infected. Now, if we take Prof. Ernst's work on the subject, we find that even Prof. Ernst does not claim that the danger is so very great. He simply says that there are cases that are dangerous even where the udder is not affected; but in judging of the amount of danger it must be remembered that all his cases were picked out by physical examination alone. No tuberculin was used, and it is just as possible to pick out these bad cases now as it was then, so that really no milk from such cows as he experimented with should be on the market. In Dr. Ernst's cases thirty-six cows were experimented with, and the bacillus was found in the milk of twelve of these thirty-six.

In the first series of experiments eighty-eight guinea-pigs were inoculated with milk from fifteen of these tuberculous cows, and the milk from only six of these cows was found capable of producing the disease, and only twelve of these eighty-eight guinea-pigs became infected.

In the second series ninety rabbits were inoculated with milk from nineteen different tuberculous cows. The milk from only four of the cows produced the disease, and only six of the ninety rabbits were infected.

In the third series forty-eight rabbits were fed with milk from five tuberculous cows, and only two became diseased, both being fed with milk from the same cow.

Practically, then, when these well-marked cases gave no greater results, it would seem that with the exclusion of these advanced cases the milk would be harmless unless the udder was affected. This seems to have been the opinion of the Royal Commission appointed by the British Government to consider the matter. It is also the opinion of such an able authority as Prof. Theobald Smith, late of the Bureau of Animal Industry. In the *Year-Book of the U. S. Department of Agriculture* he says: "We may, for convenience and clearness, typify those stages: 1. In the earlier stages of the disease, provided the udder is normal, the milk is free from tubercle bacilli. 2. In the more advanced stages, provided the udder is normal, the milk may or may not contain tubercle bacilli. If the disease has become generalized, the indications are that at some time or other tubercle bacilli may pass into the milk. This passage is revealed at autopsy by disease of the glands of the udder. The indications are that this passage is largely temporary, perhaps lasting only a day before the bacilli are caught up and filtered out into the lymphatic system. The indications are, furthermore, that comparatively few bacilli pass through the udder. The udder itself does not favor their development there, and the closest inspection fails to reveal any augmenting foci of disease. These statements are based on careful examination of slaughtered cattle, and the thorough testing of milk from advanced cases."

Practically, then, the danger is confined to cases in which there is disease of the udder; such cases are comparatively rare. There are, I believe, no authoritative statistics showing more than from $2\frac{1}{2}$ to $3\frac{1}{2}$ per cent. of cases of disease of the udder among tuberculous cows. My own experience does not give as high a percentage as that. In Pennsylvania Dr. Ridge gives the percentage of tuberculosis of the udder in the neighborhood of 3 per cent. Dr. Peters gives it as "very small." Dr. Burr gives 12 cows out of 300 cases of tuberculosis as having diseased udders, and Theobald Smith says: "Fortunately tuber-

culosis of the udder is rare. Among 200 infected animals I have only seen 1 case of udder disease, and 16 others which, according to post-mortem studies, may have shed at one time or another tubercle bacilli into the milk in small numbers, but which had no recognizable disease of the udder itself." He further says: "The large percentage of udder-tuberculosis reported by several writers lately is incompatible with all former statistics, and indicates either an unprecedented condition in certain localities, or else an error in diagnosis." And, finally, in the *Annual Report of the State Board of Cattle Commissioners*, in reports of post-mortem lesions, while disease of the lungs, mediastinal glands, etc., are reported, there is no mention made of even a single case of disease of the udder.

But the best evidence of the absence of great danger is found in such statistics as are collected by Dr. Watson and presented in the *Report of the State Board of Health of New Hampshire* for 1892. These statistics are collected from slaughter-house reports, principally in Germany, and, as Dr. Watson points out, "calves are fed exclusively on cow's milk, so that they offer by far the best of natural experiments as to the amount of danger to human beings from raw cow's milk." He shows that among

23,557	calves slaughtered	there were	2 cases of tuberculosis.	
30,477	"	"	"	1 case
143,218	"	"	"	35 cases
23,592	"	"	"	1 case
800,000	"	"	"	3 cases
24,760	"	"	"	1 case
<hr/>				
1,045,604	"	"	"	43, or .0041 per ct. tuberculous.

"The only explanation of these figures," says Dr. Watson, "is that there are few bacilli in the milk of most tuberculous cows."

Taking everything into consideration, then, the only conclusion we can come to is *practically and under natural conditions* the greatest danger from the general use of cow's milk, especially by infants, is the part it plays in the etiology of cholera infantum.

In the mortality report of the *Massachusetts Board of Health* for 1892 it is shown that there were 5739 deaths from phthisis at all ages; 2898 deaths from cholera infantum; 1455 deaths from diphtheria and croup; 827 deaths from typhoid fever; 669 deaths from scarlet fever; 80 deaths from measles. In this report we see cholera infantum placed next to phthisis in the

death-rate. Now, in considering this subject, it must be remembered that the latest statistics show that by far the largest proportion of cases of phthisis occur in people who have recently moved into houses previously occupied by consumptives; while, on the other hand, cholera infantum is due almost solely to the ingestion of impure milk. Further, the deaths from phthisis include deaths at all ages, while cholera infantum occurs only in children under five years, and practically under one year old.

In New Hampshire the proportion of deaths from cholera infantum is even greater, for the year ending 1891 the report shows 695 deaths from consumption, and 486 deaths from cholera infantum. The report then remarks "cholera infantum was the cause of more than one-third of all the deaths from prominent zymotic diseases in New Hampshire in 1891."

In Ontario for the year ending 1892, in a population of over 2,000,000, phthisis caused 2592 deaths and cholera infantum 670; but among the 23,190 children under one year old cholera infantum caused 600 deaths, while phthisis caused 283 deaths.

These figures are pregnant with meaning. Cholera infantum, or milk diarrhœa, is purely a disease of infants, due, as a rule, to improper feeding with impure milk. Yet in Massachusetts it was the cause of 2898 out of 11,668 deaths from the six most prominent zymotic diseases. In other words, cholera infantum was the cause of one-fourth of all deaths from all prominent zymotic diseases in Massachusetts in 1892, and of more than one-third of all deaths from all prominent zymotic diseases in New Hampshire in 1891.

Cholera infantum is essentially a preventable disease, and by the simple introduction of better methods of keeping and caring for dairy stock and milk, and by a realization of the absolute importance and necessity of perfect cleanliness, this source of danger can be immeasurably lessened. Knowing what is needed, then, it becomes our duty to spread information on this subject by every means in our power.

If improvements are not introduced, and if advantage is not taken of our increased knowledge on the subject, then the prophesies of certain Western men may come true, and Western Pasteurized milk may enter into serious competition with the dairy industry in the East. It behooves our farmers, then, to brace up and, for their own sake, do what they can to improve the purity and keeping quality of our milk-supply.

OSTEOPOROSIS.¹

BY GEORGE C. FAVILLE, D.V.M.,
NORFOLK, VA.

(Concluded from page 262.)

REPLYING to my questions, Dr. Harbaugh says:

1. Osteoporosis is met with in the range of my practice to a greater or less extent every year, but in some seasons it appears in enzoötic form, when the number of cases diagnosed increases the average to a great extent. I have only a limited knowledge of the disease elsewhere in the State, but from different persons I learn that it is by no means confined to this vicinity.

2. According to my observations the disease attacks old and young horses alike. In one stable where all the horses were over six years old, nine horses contracted the disease within a period of six months. In another stable where all the animals were young, two two-year-olds and three three-year-olds were markedly diseased, and some both older and younger showed no symptoms whatever.

3. In all my experience the affected animals were stabled. While it is true that some of the animals were turned out to graze or exercise during the day, and that the affected city-horses were out in the air daily at their accustomed work, still all were stabled at night. In every instance the stable was more or less damp, and lacked proper ventilation, drainage, and light.

In no case could I justly find fault with food and water. With the great majority of affected animals the food was the best that could be procured in the market, and, being to a great extent what we know as Western food, it was practically the same food as fed to the thousands of non-affected animals. In the city the water from the hydrants is used, James River water, and is, according to numerous tests by competent chemists, a practically pure drinking-water.

4. I have met with the disease in animals ranging from yearlings to aged horses, but never saw a case in a mule, ass, or hinny. I am firmly convinced that the predisposing cause of

¹ Read before the Virginia State Veterinary Medical Association, January 2, 1896.

the disease is undoubtedly the faulty construction of stables. The site of the stable, and surroundings also, have much to do with the cause. I infer that the want of proper ventilation, sunlight, and drainage in and about stables is the predisposing cause of osteoporosis. I have never seen a case in a stable where the hygienic essentials received attention. That the many badly-constructed stables with little or no ventilation do not always produce the disease proves nothing; the predisposing cause is there, but the exciting cause is wanting.

As to the nature of the proximate cause I am not at present prepared to express an opinion. In this age of microbes one dare not say that such a disease is not due to specific micro-organisms, but I am confident that osteoporosis is not a contagious disease. All my observations point to the fact that the disease is never transmitted from one animal to another, and I am equally positive that the affected animal cannot infect a place where he is kept, either directly or indirectly.

5. Treatment cannot possibly be satisfactory if the animal is kept in the stable where he contracted the disease. The first and essential thing to do is to remove the affected animal or animals to desirable quarters. As the conditions which predispose an animal to osteoporosis are such as produce rheumatism, I am not surprised to find rheumatism as a complication in a great majority of my cases, and hence this complication requires special attention. For the rheumatic complication I obtain satisfactory results from the administration of either salol and phenacetin or salicylate of soda and acetanilid. When the rheumatic symptoms are relieved I direct my attention to the deranged functions of nutrition and assimilation. The only medicinal agent I use for this purpose is the precipitated phosphate of lime. It is continued for a long time, as circumstances seem to necessitate. As to food, I always prefer a mixed diet; corn, oats, and bran, fed as a mixture, will better assume essential nutriment than either fed separately. It is scarcely necessary to remark that all food should be of the best quality. Turning affected animals on good pasture in proper season is of undoubted benefit, but they should also have daily allowances of grain.

6. I have not kept a record of all my cases, but I am sure that over 75 per cent. of those treated have made good recoveries. Of those in which the disease is recognized in an early stage,

which is always possible in enzoötics, all make good recoveries, when you can have the supervision of the animal until recovery is assured. In such cases even the bones of the head, which have become perceptibly enlarged, regain to a greater or less extent their normal condition. Of course, I occasionally see a case beyond hope, but, as a rule, really bad cases can be very much improved, and often become serviceable work-horses when the unsightly enlarged facial bones unfit them for pleasure purposes.

The length of time required for even a partial restoration is the great drawback when expense is considered. This feature prevents many owners from putting their affected animals under treatment when informed of the nature of the disease, especially when the affected animals are of little value.

Remarks. I cannot agree with the eminent authorities who class osteoporosis as a non-inflammatory disease of bone. The ordinary symptoms of inflammation are heat, pain, redness, and swelling, and they are also the symptoms of osteoporosis.

The quantity and quality of the food and water have nothing to do with the cause of osteoporosis directly. Food may possibly become a factor, the result of conditions, but deficiency of lime-salts in water or food does not produce the disease as I find it. The food may be perfect in every respect, but, as the disease is one seriously affecting the functions of nutrition and assimilation, the lime-salts which the food naturally contains are not properly appropriated. Either directly or indirectly the result of the inflammatory action going on in the bones, the lime-salts they contain are converted into soluble salts and re-absorbed, leaving the affected bones in the condition we find them. I am aware that this is a variation of the acid theory, but, to my mind, it accounts for the characteristic phenomena. I do not give phosphate of lime solely for the purpose of furnishing lime-salt to the bones; I give it to correct the malnutrition of the bones, as well as of all the fluids and tissues of the body, of which it is a normal constituent.

In all my experience osteoporosis is confined to the horse; I have never diagnosed a case in any other animal. It is by no means a disease of the poor man's stable. The great majority of my cases were in stables where the animals had the benefit of all that money could procure in the form of first-class food. In one stable, which was a brick structure, the horses' stalls

were in the rear, the stone-paved floor of which was from seven to fifteen feet below the grade of the alley. The brick wall against the earth was always wet, and, of course, the atmosphere in that part was moist. Nine horses in the stalls ranged along this brick wall developed the disease, but no case developed among the horses standing in stalls on the opposite side of the stable, as the windows and door on this side were exposed to the south, assuring plenty of sunlight, and the outside being lower than the inside there was surface-drainage, and as this row of stalls was exposed to a plentiful supply of outside air ventilation occurred naturally to some extent. When called to examine an affected horse I expressed the opinion that the structure of the stable and want of proper hygienic conditions caused the trouble. The owners took my advice, and converted the floor above into a stable. Since the horses have been kept there no case of the disease has developed, and those among the affected which were treated recovered sufficiently to be able to do hard work for months past. I have never been able to trace the disease to even a suspicion of a hereditary predisposition.

HEREDITY.¹

BY W. T. RUSSELL, V.S.,
NASHUA, N. H.

(Continued from page 269.)

ONE might say of the true thief as of the poet, "He is born, not made." Everything goes to prove that the large mass of crime is hereditary, and that a man inherits evil passions and propensities as well as special features. Hence the hopelessness of reforming habitual criminals, as acknowledged by prison-philanthropists. Now who are the criminal classes? They are a distinct race of beings, inhabiting a distinct quarter of most of our large cities, living in intemperance and vice, closely intermarrying, and producing a criminal and degenerate stock. Habitual criminals are true moral imbeciles. Many are found to be descended from an epileptic or insane ancestry, and crime is an outlet to their insane tendencies. They would go mad

¹ Read before the New Hampshire Veterinary Medical Association, February 4, 1896.

if they were not criminal. Science does not regard man as an abstract being endowed with the ability of doing right or wrong, and we cannot consider crime in all cases as a simple affair of yielding to a vicious impulse or evil passion which ought to have been easily controlled. We must recognize a border-line between insanity and crime; near one boundary we meet something of madness, more of sin; near the other boundary we meet something of sin, but more of madness.

In regard to freedom of will in connection with heredity, if the majority of men were asked, "Is man a free-will agent?" their answer would be, emphatically, yes. But let us see, especially, in connection with heredity there is great doubt whether man is a free-will agent. Heredity is a fatalistic character. Heredity and freedom of will are in direct opposition to one another. By free-will we are ourselves, by heredity of others. Those in favor of free-will say, "I have an innate sense of my freedom of will;" but they ignore the fact that every mental state is determined by organic conditions, and that this very innate sense of freedom comes directly under the head of fatalism. It is a very interesting fact in this connection that statistics show that all acts commonly supposed to be the result of free-will, such as murders, thefts, marriages, and divorces, are about exactly the same year after year, allowing for the increase of population. In France, during the last twenty years, the number of criminals varied only from six to eight thousand. This reference amounts almost to a digression, but I have made it in hope of bearing out the argument that hereditary influence has scarcely any limit. Personally, I admit that often in thinking over this subject the idea will suggest itself, Are not we, ourselves, and the animals we have to deal with, simply passive agents in the carrying out of that great law of evolution in which heredity plays so prominent and subtle a part?

Now, gentlemen, having devoted too much attention, perhaps, to this portion of the subject, there remains to be treated the still more important application of it to diseased conditions. If the deductions to be drawn from the foregoing are correct, then how forcible must be the law of heredity in its application to the transmission of diseases? In this connection I take it for granted the interest of the meeting will centre itself chiefly upon the hereditary unsoundness in horses, particularly in relation to those affections upon which opinions differ, and it is

to this part of the subject that I would direct your attention. For convenience I have grouped the conditions referred to into respiratory, nervous, bone, and blood affections, and, in addition, a few others that are not easily included in the above list.

We will commence with the respiratory division. Roaring and its variations, whether from atrophy of nerve or muscle, or from chronic thickening of the mucous membrane, have perhaps received as general a condemnation as any hereditary taint which may be thought of. On the other hand, broken wind is a much-disputed subject among the most eminent members of the profession. If we go to the human subject, and take its nearest analogy, asthma, you will find it evident that the medical profession is decided in its opinion on this point. Dr. Williams, in a paper on asthma, says: "Heredity can be traced in about 40 per cent. of the asthmatics, though the tendency may not show itself until late in life. The characteristic form of chest is often transmitted from parents to children, and even when this is not so a disposition toward asthmatic symptoms in catarrhal attacks is often seen in the children of asthmatics." I believe this quotation to be applicable to our equine patients in every line.

The nervous division does not admit of as much discussion, as for our purpose it includes epilepsy and stringhalt. Epilepsy, perhaps, would readily be admitted of a strongly hereditary tendency, but the fact of the impossibility of its detection in an ordinary examination for a time renders it beyond our pale. In regard to stringhalt, there is some difference of opinion, but grant the pathology of stringhalt as involving the nervous system, and I think it is unquestioned, and of all the hereditary affections those of the nervous system stand pre-eminent. Admit this, and a good case for the heredity of stringhalt is at once made out.

We next come to the bony enlargements about which opinions are so undivided. Spavin and splint have long been recognized as hereditary diseases; notoriously so, too, has side-bones, an affection well termed a curse among draft-horses in cities. The hereditary tendency of ring-bone I believe to be almost equally powerful, though there are disputes on this point. Navicular disease, which may, perhaps, be well included here, is, I think, on all sides now acknowledged to be hered-

itary. I have seen well-developed navicular disease in an unbroken colt.

Of the foregoing, splint is the only disease about which diversity of opinion exists as to the rejection of a sire for breeding purposes. Doubtless, in most cases, the risk involved is slight, but what I want to point out is this, the probable existence of a bony-enlargement diathesis, a condition in which the bones appear to be only waiting for a stimulus to throw out enlargements anywhere. Bony enlargements I think are, as a rule, pretty constant as to their production as to situation, yet one at times sees cases in which all the changes have been rung and inducing the idea that the exostoses develop just exactly in accordance with the amount of exertion devolving on the various limbs and positions. What I am leading up to is this, that the possessor of a large splint may probably, but not necessarily, be the possessor of such diathesis, and hence is an undesirable animal for breeding purposes. I raise the point simply as one allowing of consideration.

Of the bursal enlargements, throughpin has claimed the widest attention. Prof. Williams, with a very wide experience among Clydesdales, is very strong in his belief as to the heredity of this disease. Personally, I see no reason why the tendency to bursal inflammation and extra secretion is not equally transmissible with other diseases. From this standpoint, windgalls must of necessity be included in the list, though their frequency must be greatly augmented by conformation and here let me state my opinion, shortly, that distention of the capsule of the true hock-joint (bog-spavin) is equally transmissible.

Certain morbid conditions of the blood seem to be imparted to progeny by parents almost unfailingly. Grease is one of the most important, and its presence should warrant the rejection of its possessor. I think, also, eczema, although Erasmus Wilson says, "it is hereditary only in the sense of the transmission of natural tendencies from parent to offspring, and not by virtue of any special virus." Lymphangitis is open to discussion, although on this point I may mention that Faryer, in an article on "Elephantiasis in the Human Subject," says: "Richardson found that of 236 persons 73 per cent. had one or both parents affected." Mallenders and sallenders have been suggested as diseases which are hereditary. I would ask, Has it been positively decided that these diseases arise from any

morbid condition of the skin or blood? Some believe that they are parasitic in their origin, and until this is settled it is hardly fair to ascribe it to heredity in any degree. Perhaps the members present may help me to a conclusion.

Among the diseases of the eyes we have, fortunately for our patients, not so wide a field for operation as the sister profession. By ourselves cataract is condemned as hereditary by a most unanimous voice; so, too, I think should be some forms of ophthalmia. As illustrative of the extreme delicacy of the law of heredity in its dealing with the human eye let me instance the frequency with which even a slight cast, not amounting to a squint, in the eye of a parent is reproduced throughout a long family.

The heredity of curb, though disputed, will probably hold good on examination, though at this time I am inclined to consider it due more to the transmission of the conformation of the hock than to inherited weakness of either ligament, tendon, or sheath.

This brings us to the all-important question of conformation, the heredity of which in its application to unsoundness, to my mind, does not receive the attention it deserves. Here we have, on the one hand, certain diseases upon the existence of which veterinary examiners are advised, and rightly too, to reject their possessor; on the other hand certain conformations, in themselves far more serious than some unsoundnesses proper, and with even a stronger hereditary tendency, and upon which we have not the slightest hold whatever, and why? Simply because their possessor is technically sound. Furthermore, the more I consider this matter the more do I become convinced that the word "sound" in its usual application to horses is a pitfall and snare. It draws a hard-and-fast line, allows of little or no room for individual opinion, and frequently lands a purchaser with an undesirable animal, because the said individual, having a perfect and blind confidence in the significance of the word, has committed himself to buy the animal passing sound. If possible, I would drop the word from our veterinary vocabulary. I doubt not but that most of us have heartily wished the word in Jericho, in many instances, in the interest of a client.

To return to conformation, "feet and hocks" are the points which chiefly lay themselves open to attack in this connection.

Take the case of a horse with big, flat feet and the usually low, weak heels. With such feet, as a rule, a long journey on a hard road, or a sharp attack of purging, is all that is necessary to produce acute laminitis. In this regard there is the shape of the feet, particularly after they have undergone the changes incident to the disease, do I consider laminitis hereditary. Then again is the vexed question of conformation of hock. Take, for instance, the so-called "sickle-shaped" hock, the transmissibility of which cannot be denied, although there are notable exceptions. I ask you, Is it not the rule that, given a fair amount of work, curb is the almost inevitable result? What I hold, and that most strongly, is that we should have the power equally of rejecting animals for such conformations as well as for the diseases already mentioned. Contracted feet and curby hocks are both, I believe, inheritable malformations, but neither, with no lameness present, seems of sufficient importance to warrant an animal's rejection.

An affection upon which I have not as yet seen any comment, as to heredity, is corns. If we admit brittle feet, I think, though not that the two necessarily go together, we must also admit corns. But my paper is already too long and I will omit any consideration of hereditary vices or congenital malformations, and will close, hoping for an earnest discussion and thanking you all for your kind attention.

ON THE USE OF FORMALIN AS A PRESERVATIVE FLUID.

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FORMALIN is a name given to a solution of formic aldehyde in water of 40 per cent. strength. It has come considerably into use in the last year. The first notice of it which came under my observation was contained in the *British Medical Journal*, (1894, vol. ii., page 1429), when the following words were used: "A 10 per cent. solution of this was best suited for hardening purposes. If, after removal, an eye was immersed in this for twenty-four hours it became perfectly hard, and could be cut easily; the eye retained its natural, fresh appearance: the cor-

nea and lens were transparent; the iris was normal; blood and pus were unchanged in appearance; the vitreous was unaltered, and the retina and choroid remained *in situ*. There was no need to freeze the eye in order to cut it, as was necessary after hardening in Müller's fluid." Another notice in the same journal stated that a 20 per cent. solution hardened a brain perfectly in two days, while for gradual hardening, or as a preservative agent for anatomical and pathological specimens, a 1 per cent. solution was sufficient.

In the museum of the Ontario Veterinary College we had up to the above-mentioned period used alcohol (methylated) as a preservative fluid almost exclusively. But it has several disadvantages. It shrinks the tissues considerably, in many cases decolorizes them, while for certain purposes it is quite unsuitable. In the hope of finding a better agent, it was determined to examine the possibilities of formalin.

The first experiment was with the eye of a horse, which I desired to harden for demonstration purposes. A 10 per cent. solution was used, the fresh eyes remaining in it for two days. In sectioning these specimens the result bore out the statement quoted from the journal. But the vitreous was not hardened and the aqueous humor was quite fluid, escaping freely from its chambers.¹

Some of our transverse sections of the thorax require receptacles of considerable size. These are not hermetically sealed, but simply covered by a large glass laid on the flanged top. Receptacles covered in such a manner would allow a large evaporation of alcohol or of any fluid used in this way. Into one such tin (which was painted and prepared with plaster-of-Paris in exactly the same way as those containing alcohol) we placed transverse thoracic sections three inches thick and covered them with a 1½ per cent. solution of formalin. This was done last spring (1895), and the ensuing summer was a very hot one. It was, therefore, a good test of the capabilities of the new fluid.

Before giving the result of the experiment I may state the

¹ Further experiments show that formalin will not solidify the aqueous. I have just cut an eye in which 100 per cent. (pure formalin) was used. The aqueous was quite fluid. The vitreous, while perfectly clear and jelly-like, remained *in situ*, although the section was turned with the cut side down and shaken. This would go far to prove that the vitreous is held in position by delicate processes of the hyaloid membrane passing through it; although this is denied by many authorities.

two principal objections which some writers prefer to the use of formalin. First, it is said to be necessary constantly to add formalin to the solution, otherwise it becomes too weak to preserve the immersed material. (This objection would only apply, I presume, to jars not hermetically closed.) The second objection is, that unless the specimens are completely covered the exposed parts will become mouldy.

In the experiment here, of which I am speaking, no formalin has been added since the solution was first made. The results may be thus stated :

1. The solution has evaporated to some extent, so that portions of the sections are above water.

2. No mould has yet appeared. (I am purposely leaving the sections as they are. Some weeks ago I fancied I saw a speck of mould, but as it has not increased in size I do not think it is of that nature.)

3. No discoloration has taken place ; the sections look almost as fresh as when cut.

4. The lung-tissue is sufficiently firm and well preserved, yet a very little shrinking of it has taken place.

5. The fluid itself remains beautifully clear.

6. Comparing the tins standing side by side with this, the decoloration of some of the tissues by alcohol is very marked, while the evaporation from those tins has gone to as great or a still greater extent than from the one containing formalin.

For hardening brains for demonstration purposes we find a 10 per cent. solution the best agent yet tried. They will be in excellent order for cutting in two to three weeks. It is not necessary to inject the brain, but merely place it in the fluid.

In regard to the comparative cost of alcohol and formalin, the formalin solution is very much the cheaper of the two.

The results of the various tests being, so far, very favorable, we have made arrangements for its further use during the present season.

A two-year-old colt was gelded April 29, 1895, near Toledo Ohio. Two days later he was turned out with a mare. April 1st last the mare dropped a horse foal.

ABSTRACTS FROM FOREIGN JOURNALS.

TUBERCULOSIS OF MONKEY. A two-year-old female monkey, weighing five pounds, was presented in the polyclinic ward for small animals on February 17, 1896, and was admitted to the ward for internal diseases with the following history: "That for three weeks she had eaten but little, and suffered from diarrhœa." After a careful examination the condition of the animal was reported to be as follows:

The patient (giving description) is in a fair state of nutrition; the hair coat is rough and dull; the temperature is properly distributed over the body, and measures 38.2 C. in the rectum; visible mucous membranes are anæmic; appetite is poor; abdomen flaccid, and has "tucked" appearance, and through its walls one can locate a walnut-size nodule of firm consistency in the left lumbar region; the same is comparatively fixed. A somewhat larger body, with less regular contour, is detected immovably situated near the ventral side of lumbar vertebra. The feces are of semifluid consistency, yellowish-brown in color, at times quite fluid. The respiration is 20 to 30 per minute, and of normal type. Percussion of the thorax gives loud, full sound. Auscultation gives a slightly increased vesicular note. The two heart-tones are present. The pulse taken at the arteria femoralis runs from 130 to 150 per minute, and is at times intermittent. Psyche prepossessed. Clinical diagnosis, *tuberculosis intestinalis*.

Upon the two following days, 18th and 19th, there has been no perceptible change in the physical condition beyond a marked reduction of temperature, which was 36.5° and 37.1° C., respectively.

February 20th, patient received 0.01 tuberculin Kochii subcutaneously; temperature reading 36.2° in the morning; 36.3° at 4 P.M.; 36.4° at 8 P.M. February 21st, the temperature averaged 35.4°; February 22d, 34.5°.

Upon the morning of the 22d another injection of 0.01 tuberculin was made. Temperature at 10 A.M., 34.5°; 4 P.M., 34.2°; 6 P.M., 34.1°; 8 P.M., 34.4°.

On the 23d, the temperature averaged 34.5°, and patient showed no change in symptoms beyond slightly increased weakness.

February 24th. The patient lay stretched in cage, regardless of her surroundings. The body is cold; rectal temperature, 34.0° ; cardiac impulses imperceptible; respiration extremely shallow. After lying in this condition for several hours was killed by injection of hydrocyanic acid. The records of the case, as found in the Pathological Institute, read as follows:

"*Post-mortem.* Cadaver of female monkey, in fair state of nutrition. Rigor mortis absent. The superficial lymphatic glands are enlarged. Rectal region marked by incrustations of yellowish fecal matter.

"Upon opening the abdominal cavity one sees the mesentery studded with yellowish semi-solid nodules, varying in size from peas to hazelnuts, which, on closer examination, are found to be filled with a truly caseous yellowish-white material. The mesenteric glands are generally enlarged to the size of large beans, and one has the size of a small apple, and contains a fine yellowish substance of mealy consistency. The gastro-intestinal mucous membrane is covered with a thick, slimy layer of mucus, under which may be seen several small points of tissue-change in the submucosa. The spleen is greatly enlarged, and its dark blue-red color is broken by three large walnut-sized nodules of yellowish-white color, one of which on section shows to be composed of a mass of smaller nodules, the other two are broken down and filled with material similar to that noted in the mesenteric nodules. There are many small nodules scattered through the splenic parenchyma.

"The kidneys are likewise studded with innumerable small yellowish nodules, situated both on Glisson's capsule and in the parenchymatous substance of the organ, and particularly in the corticular layer. The organs are changed to a dirty gray-brown color, with roughened surface.

"The genital system, including uterus, Fallopian tubes, and ovaries, are almost unrecognizably changed by the deposits of nodules.

"The peritoneum shows upon the left side a few caseated nodules of small size. The pleura costalis of the right side shows similar change.

"The left ventricle of heart shows a yellowish-white nodule of pin's-head size in its muscular wall.

"The lungs in a few localized areas are more firm in substance, especially on left diaphragmatic lobe, and are yellowish-gray in appearance. In this part one can feel several small

firm nodules. The bronchial glands are enlarged and changed to caseated masses. Bacteriological examination of nodules revealed multitudes of tubercle bacilli.

"Pathological diagnosis, *tuberculosis generale*."

The early collapse of this case can be in a great measure accounted for by the administration of the tuberculin, which has in many cases shown the presence of the disease by a marked diminution of temperature instead of rise, especially in the monkey family.—FRANK MILLER, V. S., *Dog Clinic, Veterinary Academy, Berlin*.

THE *Veterinarian* reports the success of a French veterinary surgeon in obtaining recovery in two cases of tetanus with serum taken from an aged horse suffering from severe tetanus. 5 and 10 per cent. solutions, with distilled water, were used; 120 grammes, in six injections, were given—in one case in the thigh, in the second case in the gluteal region.

THE *Veterinary Record* refers to the agitation among the English people on the danger of receiving glandered horses through the numerous importations now being made. They quote the Chairman of the Committee on Diseases of the U. S. V. M. A. as to its prevalence in certain localities in our country. The prompt action of Secretary of Agriculture Morton planning for the proper and thorough inspection of these horses before shipment, and directing that shipment may be made only from certain designated ports, will afford Great Britain the necessary safeguards, and preserve this trade for our breeders and dealers.

IMMUNIZING ACTION OF IODIDE OF POTASSIUM IN REGARD TO APHTHOUS FEVER (Foot and Mouth Disease).¹ M. Piok (*Centralblatt für Bakteriologie*, 1895, No. 11) wishing to procure milk containing iodine for the treatment of syphilitic children, selected two cows to be given iodide of potassium in daily doses of twelve grammes. The result on these animals was an augmentation of thirst, and of the salivary and lacteal secretions. The milk contained a considerable quantity of iodine, which was also found in the urine of the children nourished by the milk. It happened that aphthous fever was brought among the milch-cows (numbering seventy). To shorten the duration of the epizootic, virulent matter was taken from the diseased and put

¹ Abstracted by Dr. Otto Noack, Reading, Pa., from *Revue Vétérinaire*.

in the mouth of all animals still healthy. The aphthous fever appeared in all cows with the exception of the two which were taking the iodide of potassium. As they never had been attacked by the disease, and were kept under the same conditions of nourishment and hygiene as the others, their immunity is attributed to the iodide of potassium.

IMMUNITY TO APHTHOUS FEVER.¹ Dr. Leya (*Berliner Thierärztliche Wochenschrift*, Oct. 17, 1895) states that 145 cattle, composing the whole herd of a farmer, were attacked by violent aphthous fever. It was endeavored to keep free from infection a small farm three kilometres (two English miles) distant. A year later the disease appeared at the small farm and affected the cattle of the principal farm. To shorten the duration of the epizootic, all animals which were still healthy were inoculated in the mouth by the saliva of the sick. The disease showed itself in most of them in three days; but of the 130 animals which composed the herd, 55 resisted inoculation, and it was stated that they had been attacked the year before. This fact shows that they had remained immune during this time.

INOCULATION OF TUBERCULOSIS OF THE GALLINÆ IN THE MAMMIFERS.² Cadiot, Gilbert, and Roger (*Société de Biologie*, meeting of February 8, 1896) state that the study of aviary tuberculosis has led them to the opinion that this bacillus and that of tuberculosis of the mammals are two varieties or two kinds of the same species. They admit that they are from the same origin, but that their transformation is possible. The authors sustain their opinion by a collection of eighty-five cases. Everybody can see thereby that tuberculosis of the gallinæ is easily inoculated in a rabbit, but not so readily in a guinea-pig. After different transitions in the mammals it may become very active in this rodent, and create in him, like the human virus, the development of visceral granulation. At the same time it may lose its noxious actions in the gallinæ. To observe the same modification in the virulency of the aviary bacillus, it will be necessary to continue observations for years, and to recollect that tuberculosis of the gallinæ must not be considered as a definite virus, always resembling itself; it varies remarkably between one birth and another. Reciprocally the mammals

¹ Abstracted by Dr. Otto Noack, Reading, Pa., from *Revue Vétérinaire*.

² *Ibid.*

of the same species are far from having the same disposition or the same resistance to a given virus. Consequently, we must consider that the individual susceptibility is of great influence.

THE SWINE-PLAGUE (SWINEPEST) IN AUSTRIA. Abstracted from the report of Prof. Hugo Schindelka, published in the *Thierärztliches Centralblatt* (concluded from page 287). As in the case of other epidemics, so in the swine-plague, several stages in the course of the disease can be observed. In regard to the length of the stage of incubation the reports received differ widely. If we take all reports into consideration, we must assume that the time of incubation lasts from forty-eight hours to four weeks. The majority of the observations, however, place the time of incubation at about fourteen days, three reports give nineteen to twenty-one days, and one a duration of four weeks for this stage.

The breed, age, shape of the body, and condition do not appear to influence the stage of incubation, since the reports in this regard are either entirely wanting or very contradictory. At first it appeared to me as if the duration of the incubation stage was shorter in the case of finely bred English hogs than in those of Hungarian, Polish, or German origin; but after extended observations I find that this is not the case. I must, however, side with those who accept a longer duration for the stage of incubation. I believe, therefore, in accordance with the observations so far made, that the period of incubation in this disease lasts from two to over three weeks. A shorter or longer period of incubation may be considered exceptional. I do not wish here to deny the correctness of such assertions, but feel compelled to call attention to the fact that the belief in an incubation stage of one to six days can rest only upon an error which is pardonable, as the statements of hog-owners in this matter are not to be depended upon, especially when made by people who are not acquainted with the symptoms of the disease.

The clinical course of the disease was in more than one respect a varied one. Aside from the disturbances in the general condition, always present, in a number of cases the organs of respiration were extensively affected; in other cases the digestive tract was especially attacked by the disease; and in a third group of cases the organs of respiration and those of digestion were affected to the same extent and simultaneously. Many

cases presented changes in the organs of sight, in the skin, and in the urinary organs.

But that is not all: besides the differences mentioned in localization, differences occurred in the time of onset of the symptoms, so that the cases may be distinguished as peracute, acute, subacute, and chronic.

From this the manifold forms of the disease can be explained, inasmuch as the most varied combinations of the differences mentioned occurred in the localization, the course of the disease, and the order in which the phenomena showed themselves. The affection, as a rule, first shows itself in severe disturbances in the general condition; in the majority of cases the swine are affected suddenly, a shaking chill being usually the precursor. The animals creep to a corner, avoid movement, and appear from the beginning without interest; they are languid in their movements, a symptom which shows itself plainly when they are stirred from their beds and made to move quickly. All movement seems to cause pain, which causes marked lameness, now of one, now of the other extremity. When stirred from bed they move slowly around with their back bowed, the head and neck stretched out, putting the legs, which are held stiff, down very carefully. They allow themselves to be caught without resistance. In most cases, after some days the condition seems to grow better, either permanently or for only a short time. In the cases which show a rapid progress of the disease the hinder parts of the animal are very unsteady, incapable of rapid movement, and often give way together. In one or two cases epileptic attacks have been observed.

The disease begins with fever, which becomes very high in acute cases. Shaking chills often appear, not only in the first onset of the disease, but in the more advanced stages, and in chronic cases are sometimes the prelude to a fresh attack of fever. The chills are sometimes so severe that the whole animal is moved to and fro on the bed. But it is to be remarked that chills, although usually present, are sometimes absent. The course of the fever is in all cases highly atypic.

The pathological changes in the organs of respiration show themselves in a more or less severe dyspnoea, in which the depth of the inspiration was not so noticeable as the fact that the number of respirations increased almost incredibly. I could often count from 100 to 120 respirations to the minute. This

was the case especially at the beginning of the disease, at a time when neither symptoms of bronchitis nor of other changes could be detected which pointed to a diminution of the respiratory surfaces, as is the case in pneumonia and pleuritis. It is further worth mentioning that this dyspnœa in the peracute and acute cases was permanent, and only relaxed for a short time in exceptional cases, and then showed the character of paroxysms.

In many cases the disease was accompanied by coughing, which came on mostly in spells. It was sometimes dry and painful, at other times accompanied with excretion, and in three advanced cases, in which pneumonic changes were present, it showed itself as a continuous short cough.

Finally, I may add, that in not a few cases pleural friction sounds could easily be detected. Running from the nose was often present, and in such abundance that the nasal septum was covered to a great extent with a firm, very sticky, yellowish-brown incrustation. The secretion, at first serous, assumes a mucous or muco-purulent consistency, and is similar to the excretion often seen in cases of epilepsy in the dog. According to Mr. Zaubek, about 50 per cent. of all cases show excretion.

Besides this, bleeding at the nose was also observed. Mr. Postolka saw this first in Vienna among swine of English breed, and, if I am not mistaken, as the initial symptom. We thought that this phenomenon was peculiar to the cases which take an acute or peracute course, but were soon convinced that this was not always the case, and we afterward saw a case with this symptom where the disease continued for a considerable length of time.

When I add that the changes mentioned are mostly associated with disturbances in the digestive tract, it is all that I can briefly communicate in regard to this at this time. It might be mentioned, however, that the cases in which the organs of respiration are affected admit of only a very unfavorable prognosis, inasmuch as I cannot cite a single case among the many that came to my notice where a cure was effected. Some cases which took a chronic course recovered, apparently in spite of permanent changes in the lungs, and attained even a certain degree of corpulency. Disturbances in the digestive tract showed themselves clinically in poor appetite, in great thirst, in vomiting, diarrhœa, and sometimes in constipation. These disturbances appeared simultaneously with those in the general condition. Feeding was interfered with and continued during

the course of the disease until the appetite failed entirely. The thirst was always very severe, and the observation is worthy of mention that the sick hogs preferred filthy water which had been befouled with urine and excrement to pure water. The mucous membrane of the mouth was dry from the beginning and the tongue cracked. Besides this, vomiting is to be mentioned among the initial symptoms observed in a great number of the sick swine. Often bright yellow or brownish-yellow matter, mostly in tough and shiny masses, was emitted. The act of vomiting was repeated several times, as a rule, and often without especially severe effort. I must call attention to the fact, however, that vomiting is not one of the constant symptoms of the disease, but is wanting in numerous cases. In the reports this symptom is seldom mentioned. The communication of Herr Dobes is interesting, inasmuch as he has observed among other gastric symptoms meteorism (flatulent distention of the abdomen).

Of the other symptoms in the digestive tract diarrhœa and costiveness are to be mentioned first. Often in the further course of the disease diarrhœa follows constipation, or the one alternates with the other in chronic cases. In young animals diarrhœa was observed oftener, in older ones constipation. I believe the exhausting diarrhœa, together with fever, to be the cause of the emaciation and the great loss of strength which follow very rapidly. The observation could sometimes be made that a well-fed animal would fall away to a skeleton in a very few days. With the initial symptoms of this disease, and sometimes even before these, especially in young animals or acute cases, diarrhœa began. The excretions had a greenish-yellow, brownish-yellow, or bright yellow color, contained sometimes a mixture of blood, and had a slimy consistency and a fetid smell. In acute cases the diarrhœa remained constant. The evacuations were frequent, and before death apparently involuntary.

In another series of cases, and especially in those showing a prolonged course of the disease, constipation was observed from the beginning. The animals, as the owners stated, and we could verify, did not make manure for one or two days, then had an evacuation of solid excrement of the following consistency: strongly inspissated, solid dung was evacuated in the form of hard lumps of various size, the surfaces of which, in advanced stages, were covered with croup-like membranes showing little

canals of blood. The color of the lumps was from a dark to a black-brown, very seldom clay-colored. This last color, as well as the absence of membranous fat and blood, were warranted a good prognosis.

The disturbances in the health which have been so far enumerated formed, so to speak, the commonest and constant condition, and appeared as a rule in conjunction with disturbances in the intestinal tract or with disturbances in the respiratory organs.

The other clinical changes which, as mentioned, affected the eyes, the skin, and the urinary organs, formed a complication which was not present in the majority of cases. I will now briefly speak of the changes in the organs of sight. Very frequently a severe conjunctivitis was present with photophobia. The conjunctivitis was marked in many cases with profuse secretion of a tough, slimy substance which caused adhesion of the lids. Now and again a peripheral clouding of the conjunctiva was seen, and a deeper affection of the organ of sight was not seldom observed. Several veterinarians were able to prove the existence of exudation in the front optical chamber, and Herr Niemetz mentions some cases of total blindness. Although almost all observers assert that the affection of the eye was very frequent, some going so far as to say that almost all swine showed a purulent conjunctivitis, nevertheless I must assert, in opposition, that in great numbers of cases, and in such as often take an acute or fatal course, that beyond aversion to light and a somewhat severe inflammation of the conjunctiva, no further affection of the organs of sight could be detected. I feel compelled to call attention to this in order that the diagnosis of the disease may not be made dependent upon the presence of disturbances in the eyes. In judging the different cases definite conclusions for the prognosis cannot be drawn from these changes.

Changes of an eczematous nature I have never observed, and in the light of my own experience I doubt their occurrence in this epidemic. I believe, likewise, that the necrosis of the skin as it has been observed here and there does not stand in direct connection with this disease, but I do not wish to deny that both processes may often occur at the same time. The occurrence of hemorrhages into the skin has been mentioned by several observers. In fact, this occurs very often in the form of petechiæ, vibices, and ecchymosis, less frequently as purpura hemorrhagica. These formations of blood are usually the end-

symptoms, and are more prominent on dead than on living animals, especially after scalding.

The pathological changes in the urinary organs concern mostly the amount and nature of the urine. A diminution of the quantity of urine can be observed, and then a very decided excess of the same, and finally bloody urine. The first case could be brought about by the presence of profuse diarrhœa. Excessive urine is not a very uncommon phenomenon. I have been able to observe it several times at the beginning of the disease and once in its course. To what cause these symptoms should be attributed I do not know, as I had no opportunity to observe these cases further and none to examine the urine. They are probably connected with the affection in the kidneys. As far as bloody urine is concerned I have not had sufficient experience myself, nor do the reports give information of this. I saw such cases several times, but had no opportunity to follow them up. A few times I was present at the post-mortem examinations, which showed, among other symptoms of septicæmia hemorrhagica, infusions of blood in the kidneys. The animals so affected very probably showed bloody urine during life.

THE SWINE-PLAGUE IN AUSTRIA ON THE DECLINE. The swine-plague which has been raging in Austria during the past year is now steadily on the decline. Compared with the report of January 7, 1896, the number of districts afflicted show a decrease of 14, the number of places 86 less, and the number of farms 596 less. The epidemic is, according to the report of January 21st, still present in 51 districts, 131 places, and 1751 farms. The number of swine endangered amounts to 7499 head, of which 4608 are sick.

In Hungary, also, the pest has declined gradually, and, according to the report of January 22d, is still present in 36 districts, 12 cities, and 928 places.—**TOSCANO'S REPORT** in the *Thierärzt. Centralblatt*, February 15, 1896.

TEN per cent. trikresol soap will be found a useful medicament for those dry, scurfy skin-eruptions along the backs of cats, often resulting from imperfect assimilation of food, and incidental to old age. The soap moistened sufficiently to make a lather, and allowed to dry on, is a very satisfactory method of using it.

REPORTS OF CASES.

A CASE OF CANINE TUBERCULOSIS.

BY FRANK MILLER, V.S.,
CANINE VETERINARY ACADEMY, BERLIN.

A DOG was brought to the polyclinic for small animals in the Veterinary Academy at Berlin, February 1, 1896, and admitted to the internal clinic with the following history and result:

The patient is said to have been in poor health for several months, and had been treated before in the polyclinic. At times the medicine seemed to benefit the patient, at other times it was without effect. The owner gave want of appetite, great thirst, coughing, and blood in the urine, as cardinal symptoms noted by him.

Systematic physical examination was as follows: The patient, a hound seven years of age, is in extremely poor condition of flesh. The bones are prominent. The vertebral column is roached. The hair is dull. The temperature is evenly distributed and is 40.4° C. in the rectum. Pulse 110 per minute, full and rhythmic. The heart-tones are indistinct and are replaced by murmur. The heart-beat is to be felt on both sides. Respiration, 20 per minute. The patient coughs, particularly during percussion. The cough is weak and toneless. The percussion gives a loud clear tone, and auscultation gives a vesicular respiratory sound. The respiration is deep, and the thoracic frame is active. Inspiration and expiration bear the proper relation to each other. The appetite is very poor and thirst much marked. The abdomen is tucked up, or contracted. Palpation of the region of the stomach and kidneys causes uneasiness. The palpation of the bowels and bladder reveals nothing abnormal. Rectal examination shows the mucous membrane swollen. The patient has marked tenesmus. The intestinal evacuations are semifluid and dark-brown in color. Urine was not observed. The movements are slow and faltering. There is entropium of both upper eyelids, and crusts of semi-dried mucus in the internal canthii. The conjunctival membranes are of pale washed-red color. The eyes, clear, with complaining expression. Psyche depressed. The average temperature, pulse, and respiration

while under observation was as follows : Temperature, 39.55° C.; pulse, 118 ; respiration, 24.

Patient failed in condition gradually, and died February 19th under symptoms of collapse. The report from the Pathological Institute, where post-mortem was made, reads as follows :

"No. 1841. Cadaver of emaciated dog. Rigor mortis present. Pleura costalis, pericardialis, and diaphragmatica thickened and covered with multitudinous round, warty, pea-sized nodules, which in a few cases by conglomerating gave small apple-sized nodes. In sections these nodules were smooth and gray and white in color, of semi-solid consistency (cheesy). The anterior and posterior mediastinal glands are enlarged and tumefied, and in the centre are caseous. In the centre of the mediastinum is a tumor of fist size, whose centre is entirely broken down into an abscess, the walls of which are thick, and contains yellowish-white, thin material, which, microscopically examined, consisted of broken-down glandular tissue of primarily tuberculous nature and mixed infection. The pulmonary pleura is smooth and glistening, lungs marked with black pigment and well inflated ; however, much serum escapes on cutting. The pericardium contains a few grammes of yellowish flocculent fluid. The auricles and ventricles of the heart are slightly dilated without compensatory thickening. The valves are normal, as is also the entire endocardium. The peritoneum is smooth and pink in color. The small intestines contain liquid contents. The intestinal mucous membrane and that of the glandular section of the stomach is of bluish-green hue and covered with mucous. The spleen is enlarged and of blue-red color ; its pulp is firm and its trabecular structure is visible in its section. The liver is somewhat enlarged, of deep red color, and is filled with blood which flows freely from its cut surface. The mucous membrane of the bladder is studded with gray-black nodules of pea-size, and is also marked by small hemorrhagic spots of pin-head-size. The renal capsules are clearly adherent to the kidneys, which are nodular and of gray-red appearance. Many small grayish-yellow nodules are seen upon their surface, to which they give the peculiar uneven contour mentioned. In places they aggregated into patches of dollar-size. Upon section these spots are seen to dip down from the cortex toward the pelvis in wedge form, but are not sharply defined from the surrounding tissues. Microscopic examination gave tuberculous tissue and bacilli Kochii.

"Pathological diagnosis: Acute general tuberculosis. Gastric contents, catarrhal. Œdema pulmonum. Dilatation of cardiac chambers. Cystitis hemorrhagica."

This case has many interesting points as written. In addition to the hospital report, I wish to mention that I have ascertained that the patient had received 0.02 tuberculin hypodermically about three months prior to his admission. This failed to give any reaction. The conditions found at the post-mortem, at least some of them, indicated that the process had been going on for several months, especially in the mediastinal glands. The condition of calcification was entirely absent, as is usual in canine tuberculosis.

LEUKÆMIA IN A CAT.

BY DR. WILFRIED LELLMANN,
PROFESSOR AT NEW YORK COLLEGE OF VETERINARY SURGEONS.

DURING the end of February I was requested to examine a cat, which according to the history of the case had been falling away for several weeks, although the appetite had always been quite good. A thorough examination of the patient gave the following results:

White female cat, about two to three years of age, in a poor state of nutrition, staring coat, hair lustreless, erected, showing general weakness. The visible mucous membranes were remarkably pale; the pulse was rather small, soft, and irregular, beating about 150 per minute. The heart-beating could be felt on both sides of the thorax very distinctly, and was rather a little stronger than normal. As the animal was in an emaciated condition the heart-shock could be seen on the left side of the thorax. Percussion of the heart-region gave enlarged dulness of the heart, the sound being somewhat tympanitic. When auscultating the heart I heard both tones, the first being somewhat higher (metallic timbre); the second tone weaker and not to be heard very distinctly. A sound was to be heard besides synchronical with the systole. This, however, was not to be referred to an organic trouble; it was simply a so-called anorganic noise (abnormal bruits of anæmia). According to the above symptoms of the circulatory apparatus I diagnosed dilatation of the heart.

The temperature, measured in the rectum, was $102\frac{2}{5}^{\circ}$. The

respiration was increased to 48 per minute. The percussion of the thorax did not give anything abnormal, except the above-mentioned dulness of the heart. The auscultation of the lungs did not prove anything abnormal; vesicular breathing, although a little sharp, was heard. Appetite was good; feces looked dark and were rather thin. When palpating the abdomen, the spleen was felt distinctly, and seemed to be enlarged; also the liver, the submaxillary, post-pharyngeal, supramammary, and inguinal glands could be pointed out easily; they were also enlarged. Urine could not be obtained, although I was very anxious to make an analysis and microscopical examination of the same.¹ The physical behavior of the cat seemed to be perfectly normal; she was comparative lively.

In order to complete the diagnosis I proceeded to make an examination of the blood. This was drawn from the ear and examined by means of the Thoma-Zeiss hæmacytometer. Macroscopically the blood appeared to be somewhat discolored, having a dirty reddish color and coagulating rather slowly. Both red and white blood-corpuscles were counted several times; the counting resulted in the proportion of 1:12, while the normal proportion is 1 white corpuscle to 350 red blood-corpuscles. While making the examination of the blood I found among the numerous leucocytes principally the multinuclear cells, also some mononuclear and some in hyaline stage. A great many red blood-corpuscles in the embryonic stage were also found. Toikilocythosis was also to be seen. The diagnosis was now assured as *leukæmia*. As is well-known we distinguish three different forms, that is, lymphatic, lienal, and myelogenic form. In this case I diagnosed the presence of all three forms. I based the myelogenic form upon the presence of a great many red blood-corpuscles in the embryonic stage.

The condition of the patient, which had been the same for about one week, now changed suddenly, the animal showing a rapid collapse, and died under the symptoms of internal hemorrhages. An autopsy was made immediately after death and proved the diagnosis to be correct.

Autopsy: When removing the skin a subcutaneous hemor-

¹ It would have been interesting to make an analysis of the urine, as we know that the so-called alloxur bodies (uric acid, xanthin, hypoxanthin, guanin, carnin, hetero-xanthin, etc.) are increased in leukæmia. This is to be explained by the decomposition of the multiplied leucocytes.

rhage was found on the left side of the thorax, measuring about $1\frac{1}{2}$ tablespoonfuls. The abdominal cavity contained a serous liquid of 2 tablespoonfuls. The peritoneum was of grayish-white color. The intestinal canal was almost empty, having only very little liquid contents and half a dozen ascarides. The solitary follicles of the large intestines were enlarged. The rectum contained a little feces of soft consistency. The liver was enlarged, and showed on the diaphragmatic surface of the lower portion of the medial right lobes small hemorrhages under the serous membrane. On section the acini were found enlarged, but could not be distinctly recognized, the liver-tissue being of grayish-yellow color; the central veins hardly contained any blood; the consistency of the liver was rather soft. The spleen was enlarged, of rather hard consistency, and of dark-red color. The Malpighian bodies could be distinctly recognized, and appeared to be larger than normal. The mesenteric glands, the pancreas Aselli, and the inguinal glands were considerably enlarged, some of them having the size of a large bean. On section the kidneys showed small hemorrhages in the pyramids, otherwise normal. The pleural cavity contained a bloody exudate of about one tablespoonful. Heart was much enlarged, the pericardium containing half a teaspoonful of a bloody exudate. The heart was in diastole, both ventricles containing blood, the right ventricle more than the left. The heart was very much dilated, and the walls of the right ventricle very thin; the walls of the left ventricle were also atrophied. The atrio-ventricular and semilunar valves were normal. The heart-muscle itself showed a somewhat grayish-red color, being dry on section. The lungs were not entirely retracted. On the dorsal surface of the visceral pleura a great many small white spots were to be seen, varying in size from a pin-head to that of a grit-granule. On section a foamy fluid could be scraped from the surface. The bronchial and mediastinal lymphatic glands were also enlarged. The consistency of all the lymphatic ganglions was rather soft; on section they showed a grayish color. The cerebral and spinal meninges showed numerous very small hemorrhages. The bones of the extremities were examined, the marrow being of a rather dark, red color and gelatinous consistency, in short having the appearance of raspberry jelly. The tela ossea was rather thin, the bones being frangible.

MYELITIS IN A DOG; RECOVERY.

BY ROBERT W. ELLIS, D.V.S.,
NEW YORK CITY.

ON January 9th last, I found the subject, a fox-terrier dog, about eight years of age, suffering with paraplegia of hind extremities involving the rectum and bladder. There was temporary anorexia, which I attributed to the fact that constipation had existed for two or three days. Although he could not stand or even wag his short butt of a tail, he would respond to his name when called, by travelling after you on his forelegs, trailing his hind ones after him, the muscles of which were so relaxed that the limbs would cross each other when he would turn from a straight course.

I began treatment by administering a dose of "salts," which I have found to be quite as responsive in the canine as in the human subject, and very convenient, as it can be carried in the pocket, so that you can dissolve a teaspoonful and administer it at a moment's notice, if requisite. I have adopted its use almost entirely in canine practice to the exclusion of the oleaginous form of purge. I immediately followed the administration of the purge by the application of electricity to the lumbar region and hind extremities, and during its application there was a decided movement of the bowels and voiding of urine. At the first application of the electric current, and at the next three or four, the dog seemed to suffer no pain, but after about the fifth or sixth application there seemed to be hyperæsthesia of the parts, they being very sensitive to the touch, and a look of dread seemed to pass over the dog's countenance at the sight of the battery; also there was a continual complaining during its application. The next morning after the first use of the battery and movement of the bowels the appetite had returned and remained good from that time on. At this time I put the patient on *tr. nucis vomicæ*, \mathfrak{m}_{iij} , three times a day, which I steadily increased until it reached \mathfrak{m}_{xx} three times a day. I continued the use of the battery twice a day, and at each application of it, much to my discomfort, although undoubtedly for the patient's good, defecation and micturition took place.

Recovery was gradual, so that at the end of about two weeks he was able to bear his weight on the limbs if they were placed

in a standing position and a hand was placed against each hip to prevent him falling sidewise, and at the end of three weeks he was able to get up himself and stand, and a day or two later ventured, on being called, and found he could walk, although if he attempted to run he would fall.

At this point I began to decrease the doses of *nux vomica* and to use the battery only once a day and then every second day, and finally, about ten days from the time of his beginning to walk, I ceased its use altogether, also that of the *nux vomica*. After he began to walk his bowels and bladder resumed their normal functions, and I was no longer annoyed at the time of using the battery. The dog at the present time can walk or run at will, has an enormous appetite, and has grown very stout and heavy.

There is still noticeable at times a lack of *entire* control of the hind extremities, or when turning a corner short in chasing a cat; but I am in hopes that will entirely disappear with the return of the dry weather of the summer season.

URETHRAL CALCULUS IN A HORSE.

By L. A. GREINER, V.S.,
INDIANAPOLIS, IND.

IN June, 1895, a horse thirteen years old, very low in flesh, was brought to my infirmary for treatment. The history of the case was obscure, the present owner having had the horse only a few weeks, but while in last owner's possession he was noticed to have difficulty in urinating. The attempts were made frequently and with considerable straining and paddling of the hind legs. Soon noticed the above symptoms, and on examination of the urethra I found a large hard lump (the calculus) about $2\frac{1}{2}$ inches below the anus. On casting the horse and cutting down on the stone it was found to be very firmly imbedded in the mucous membranes and difficult to remove. The roughness of the stone accounted for the trouble. Hemorrhage was considerable, several small arteries having to be ligated before the horse was allowed to get up. The external wound was stitched and dressed antiseptically. It took about four weeks to heal entirely over, and at that time all the urine was escaping through the meatus urinarius. Nothing was done in the way

of passing a catheter as this was found to be impracticable, the catheter entering some of the pockets formed by the distended mucous membranes at the seat of the operation.

The calculus was of oxalate of lime species. It was irregularly egg-shaped, and at three of the roughened surfaces firmly adherent to the mucous membrane. The following measurements will give an idea of the size of the calculus: Weight, 6 ounces and 2 drachms; longest diameter, $3\frac{3}{4}$ inches; shortest diameter, $2\frac{1}{8}$ inches; longest circumference, 10 inches; shortest, $7\frac{1}{2}$ inches.

CORRESPONDENCE.

OSTEOPOROSIS NOT MILLET-DISEASE.

EDITORS OF JOURNAL OF COMPARATIVE MEDICINE, ETC.

After the publication of the article I read at the first meeting in America of the International Veterinary Congress, several criticisms appeared in the JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES explaining the conditions, and its cause, of the disease which I saw fit to call "Millet-disease." At that time I did not deem it expedient to make reply to these critics, thinking that at a later date, when I had further experimented with millet, I could add something new on that subject.

The first article I wish to take up is that of G. J. Bowker, V.S., of Groton, N. Y., which will be found on page 9, No. 1, vol. xv., of the JOURNAL. While this does not bear directly upon the subject under consideration, it is an indirect hint as to the cause of the disease. I quote the following: "Last summer I was in North Dakota, near the Red River Valley country, which is noted for its alkaline water. The water is so thoroughly impregnated with the salts of lime that in the summer the shirts of the men working in the sun, drinking large quantities of water and perspiring freely, will be all white from the sediment left after the sweat has been dried up."

What is known as alkaline water is alkaline because it contains sulphate of magnesia and sulphate of sodium, and not on account of the lime. The water of the Red River Valley contains but little lime, as will be seen by the following analysis:

	Medora.	Fargo.	Jamestown.	Moorhead (artesian).	Kindred.	Devil's Lake.
	Parts per million.	Parts per million.	Parts per million.	Parts per million.	Parts per million.	Parts per million.
Total solids,	1540	361	1300	637	1853	3476
SiO ₂	Trace.	5.71	Trace.	Trace.	Trace.	Trace.
K ₂ O	2.07	1.97	2.85	7.03	12.03	7.68
Na ₂ O	39.93	24.64	14.63	40.83	50.57	42.18
CaO	Trace.	21.53	27.25	10.68	1.73	0.80
MgO	Trace.	Trace.	7.18	Trace.	5.14	Trace.
FaO ₃	o	o	Trace.	o	Trace.	Trace.
AlO ₃	o	o	Trace.	o	Trace.	Trace.
P ₂ O ₃	0.08	o	Trace.	o	o	Trace.
SO ₃	46.35	15.42	29.72	23.17	20.46	23.96

The most highly alkaline water of the above group is that from Medora, which shows 39.93 parts per million of soda. This is in the form of sulphate of soda or Glauber's salts. We know from personal experience that two glasses of that water are sufficient to act as a purgative.

Just think of the men sweating lime until their clothes are saturated, and enough has passed through that they become white on the outside! We think Dr. Bowker must have meant that as a joke, for if he ever studied physiology he would know better than to make an assertion of that kind, that the sweat-pores would give off such quantities of lime as that. By calculating from the above analysis he would see that a man would have to drink at least a barrel of water every twenty-four hours in order to get sufficient lime to saturate the outside of his clothes. The above analysis proves that his lime-theory is not well founded.

On page 41, vol. xv., is an article headed "Osteoporosis Not Millet-disease," by W. H. Mattson, V.M.D., in which Dr. Mattson attempts to argue the case without any knowledge whatever of its merits. I will take up his argument by beginning with the last proposition, in which he says: "I (Mattson) have fed millet to my horses for weeks together, and have known horses all around me to have been fed on it with no hay at all, and I have never yet seen any bad effects from it." Therefore, because Dr. Mattson and his neighbors have had no bad effects from millet, the millet produces no bad results. His argument falls flat. There are many people in the United States who have owned horses for years, who have never had a case of pneumonia, therefore horses do not have pneumonia, following out his line of argument. Dr. Mattson further says that my experiments seem to him a waste of time, as they show nothing

whatever. "Things are not always what they seem." I am very sorry the doctor has no use for experiments, and that he can see no good come from them. I had hoped that every veterinarian would at least contribute some definite knowledge that usually can only be obtained by experimentation. He asked the question, "What has ventilation to do with the result of millet as food for horses?" It has much to do, if, as I maintain, its use produces the condition which we have outlined and have shown does exist in sections where that feed is used largely as coarse food. Thorough ventilation is a very important factor in the use of any food, and, when the tendency is for any food to act on the kidneys, ventilation should be of such a nature as to cause the freest action of the skin, and relieve those organs in that manner of as much work as possible.

The continued experiments here at the Station, from the feeding of millet, resulted in the total destruction of one animal and the laming of another for life, the animal now being entirely unfit for service of any kind. Post-mortem examinations have shown us that the synovial fluid in the joints, although there was no rupture in a single case, contained red blood-corpuscles in sufficient quantities to render it of a dark-blood color. An examination of the kidneys by Dr. Formad showed that chronic inflammation was present, and that other changes had taken place showing a tendency to fatty degeneration. These conditions we *know* were present after feeding millet for a period of about three months. We also know that the animal, as far as physical diagnosis was able to demonstrate, was entirely well at the time the experiment was begun. This animal, aged, was positively known not to have been sick for five years previously to using her for the experiment.

Before Dr. Mattson attempts to show us that this millet-disease is osteoporosis, we would like to have him publish a clear, clean-cut statement of what osteoporosis is, the pathological conditions that are present, and the cause of the same, as far as he has ascertained. If he does that, then we will be able to enter into a further discussion of the merits of this case.

T. D. HINEBAUCH.

FARGO, N. D.

New Zealand has prepared a bill for submission to the people looking to the exclusion of consumptives from their colony, from any country, under a very heavy penalty.

EDITORIAL.

ALREADY the signs of the changes on the college-chart are looming up over the horizon of the future educational forces in America, and, with three new schools in the band having a curriculum of three years of six months each, obligatory on the students entering the sessions of 1896-97, the most sanguine and hopeful friend of higher veterinary education will rejoice beyond measure at such an outlook. With another school about to undergo changes through the loss of two of its most valuable instructors, because they believe the time for a longer curriculum has arrived, and their college does not, means another victory for the cause that is little less in importance than the step taken by the other schools. This will leave but three schools on the list of two-term requirements, and the growth of State boards of examiners and the demand for more broadly educated men will soon decide the future of these schools and win victories for this grand cause, that will surely come, whether reluctantly conceded or by the force of circumstances that shall limit and circumscribe their sphere to a narrow field, wholly unacceptable to those who have long directed these institutions. Let the good work go on!

PRESIDENT HAINES, of the American Society for the Prevention of Cruelty to Animals, is out in a leaflet relative to the operation of docking. After a brief review of the anatomy of the parts, especially the sensory nerve-supply, the common method of operating—with a twitch, one foot tied up, the docking knife, and cautery—is described, its painful character under such methods is forcibly alluded to, and opinions condemning the operation as one of fashion and cruelty are quoted from veterinarians Prof. George Fleming, Professor Pritchard, Professor Zuill, Professor Liautard, Doctors S. K. Johnson, L. McLean, and John. W. Gadsden. We join with President Haines in wishing that the operation, as one of fashion, and especially in the manner described, may be forever abandoned. The operation as performed to-day is largely done by grooms, horsedealers, and others, but, as well said by Professor Haines, with the consent and acquiescence of owners; and we would

say even more, that we have known active personages in the Society of which President Haines is the honored head to decline to have horses docked, and in the same breath decline to purchase any save those with docked tails.

ANOTHER IN THE FOLD. Just as we are about to go to press with the May number comes the welcome news that the Chicago Veterinary College will, with its opening session of October, 1896, enter the roll of schools with a curricula of three years of six months each. This school, the oldest of all the Western schools, and with a very large alumni scattered over the entire West, enters the number with a prestige and strength back of it unlike any of the other three-year schools west of the Allegheny Mountains, and we are sure it will prove a tower of strength and support in this fresh determination to be among the foremost schools of our country. Well may the profession rejoice; well may the United States Association members feel proud of this accession to the ranks, and all honor to the Association of Faculties, whose strong advocates and supporters have so well and conservatively, without bond or fetter, drawn every school to its recognition, and won support in its efforts in fields where the mere suggestion of legal ties and bonds would have driven away many of those who now worship at its altar.

THE JOURNAL regrets exceedingly to learn that Professors Brenton and McEachran have severed their connection with the Detroit Veterinary College, and specially so for the reasons assigned. Higher veterinary education has a sincere advocate in Professor Brenton, and the courage of his convictions is more than demonstrated by his refusal to continue longer with a school whose course did not command his earnest approval and hearty support.

THE Committee on Army Legislation, undismayed by unfavorable reports from the Quartermaster-General's office, continued to press the present bill before the House Military Committee, and, having eliminated the clause that confined future appointments to graduates of veterinary colleges of the United States, have been enabled to secure, through the kindly aid of Chairman Hull, the favorable approval of the bill, and

the same placed on the calendar of the lower House. The Senate committee will await the action of the House in dealing with the bill, and its passage through the latter will place it in a strong position for consideration in the upper branch, which is much to be desired from all points of view; for in the event of failure at this session it gives strong prestige for the bill in the next session of Congress, and all should aid its advancement in every way they can.

MARRIED. At Philadelphia, April 18th, by Friends' ceremony, Dr. Henry W. Turner, of Lahaska, graduate of the Veterinary Department University of Pennsylvania, and Miss May Atkinson, of Solebury, Pa.

DIED. At St. Louis, Mo., on March 19th, Dr. Charles Hesse, an old and well-known practitioner in that city.

GLEANINGS.

Dr. Joseph M. Good, of Chattanooga, Tenn., reports the use of tetanus-antitoxin in two cases, one of which made a good recovery.

A Washington, D. C., canine died in the chair of a dentist who, at the solicitation of the owner of the dog, attempted to drill out a tooth, with a view of filling it.

Creolin finds one of its most useful fields in obstetrical practice among veterinarians. Its antiseptic properties, its emollient action on the parts, and where the latter have become dry and inflamed it facilitates manipulations, and serves thus a double purpose.

Warm creolin injections in constipation and impaction of the lower bowel of dogs aids wonderfully in remedying these conditions, and in very small dogs saves them from those painful manifestations that so often leave the animal in sore distress for days after the removal of the offending mass.

Good horses wanted by buyers, either for the track or road, are said to be worth 20 per cent. more than they were at this time last year.

CONTROL WORK.

Massachusetts. The Springfield *Republican*, in a recent issue favoring, through its editorial columns, the sustaining of the Tuberculosis Commission in Massachusetts, likened the present experiences of the Board in their use of tuberculin to the organized and determined opposition to and condemnation of vaccination in the early days of its adoption. It voices its opinion in strong support of the work, and quotes from those best able to judge of its real merits, who have been delegated by the Bay State to examine from an impartial point the value of this work. The Commission may well feel proud of the support and earnest recognition of so powerful an ally in all worthy movements as the *Republican* stands for in our land.

Lynn reports licensed milkdealers to the number of 783, a general improvement in the quality of the milk sold, and the arrest and conviction of 28 dealers. Six dairies were stopped from supplying milk owing to their bad sanitary condition. There were 1455 cattle inspected, 369 tested with tuberculin, of which 97 were condemned and killed.

Connecticut. A herd recently tested at Windham showed two-thirds of the number diseased, and the New Haven *News* urges the State to more thorough inspection, and that every citizen demand from his milkman, before accepting the milk, a certificate of inspection, showing the herd free from tuberculosis.

Twenty cows and one bull of the Woodward herd at Thompsonville were recently destroyed on the tuberculin test, and at the autopsies an object-lesson was given to a large number of farmers, cattleowners, and dairymen. Seven animals from three other herds were condemned, destroyed, and, on autopsy, revealed abundant evidence of the disease. In these examinations not a single condemned animal failed to reveal evidence of the disease, though many of them had the appearance of vigor and strong constitutions.

Rhode Island. Dr. F. H. Osgood, of the Massachusetts Cattle Commission, speaking on the subject of legislation at the recent convention of the various Commissioners of the

New England States, at Providence, said there was great need of inter-State laws regulating the traffic in animals in those States bordering on Massachusetts. Within their own States they had ample laws and machinery, but on the borders, where a great deal of traffic was involved, it was impossible to maintain a cordon of police to prevent diseased animals from slipping in, and the temptation to bring them in was great during 1894-95, when the State paid full value on a sound basis. The changes in the laws governing the Commission had worked no great injury to the value of their work, it had changed the plan and afforded more time for the education of those who opposed the use of tuberculin for diagnostic purposes, but these were being won over faster than the Commission could perform the work requested. The one great need to-day was the regulation of the sale of milk from other States within her borders. This should not be allowed unless the herds had been tested with tuberculin, and their freedom from disease certified to by competent veterinary inspectors, either of the adjoining States or delegated by Massachusetts to perform this work in the interest of her people. Ultimately, he thought, every herd would be examined by request or consent.

Veterinarian F. A. Rich, of the Vermont Experimental Station, speaking on the subject of the relation between bovine and human tuberculosis, said how different was the conception of this question some years ago, all of which was changed now, and how rapidly the people were appreciating the danger in an unguarded milk- and meat-supply. How much greater the need of watchfulness over the milk so largely used as a raw product, and so many times the product of diseased cows, and especially dangerous where the disease had so extended as to involve the udder, a condition found to exist in a much larger number, when carefully examined, than was generally admitted. The variety of forms which tuberculosis assumes in the human family, and the terrible losses annually occurring, made it the greatest and most important question of the day for solution, and to free our people from the dangers that lie in a polluted milk-supply must be a problem for the earliest and most thorough solution. He reviewed briefly the strong positions taken upon the subject by the leading and most advanced medical writers of the day, and favored the establishment of a veterinary sanitary police as the most crying necessity of our land in vouchsafing

our people security from the dangers that are now known to be possible of control.

Dr. Gardner T. Swartes, of the State board of health, thinks that the proper officers of the State should be given the power to prevent the bringing in of diseased cattle from other States, "that all milk-animals should be tested," and that the farmer should receive ten cents per quart for milk produced under proper sanitary conditions.

New York. The *Tribune* of New York City, in a recent editorial referring to the bill destined to provide one million dollars for controlling and eradicating bovine tuberculosis, thought it a very modest sum under all the circumstances, and in commending the appropriation thought that one should not be long in deciding such a question when the State annually lost 5000 to 6000 of her people from this disease, and that one very great source of its existence, propagation, and perpetuation could be largely removed by this sum, which, when compared with this great loss, paled into insignificance. The *Tribune* favorably commends the passage of the bill, and well asks, What would the people of the Empire State not do if a similar number of people died in any one year from any other disease?

Another bill has been presented in the Assembly to reopen the registration-books for non-graduates for a period of thirty days, and to admit to registration those who had been in practice for three years preceding the passage of the original act. This looks like another effort to allow a single individual to register and thus avoid the criticism of special legislation. The committee is alive to its existence, and will no doubt check it before it reaches a place on the calendar. When will these efforts to evade the law cease?

Pennsylvania. Excerpt from the advance sheets of the report of State Veterinarian Pearson:

Tuberculosis. Perhaps no subject connected with the health of animals has received so much attention in the agricultural press during the past two or three years as this disease. For a long time tuberculosis was regarded as an infection inherited or caused by bad surroundings. At the present time the proof is conclusive that it is an infectious disease, and that it develops only upon exposure to a tuberculous animal or to its products. The active cause of the disease is a bacillus which was discovered by Koch. The germs are contained in the excretions and dejecta of tuberculous animals, and when they are carried into the body of a healthy animal in

sufficient numbers they set up the disease. They are contained abundantly in the material coming from diseased organs. Anything that reduces the vitality of the animal renders it more liable, upon exposure, to contract this disease. So that close stabling, but little exercise, irrational feeding, bad ventilation, etc., while they do not cause tuberculosis, render it much easier for the disease to develop in an exposed animal.

When this contagious disease appears in a herd, it is necessary, if we wish to exterminate it, to remove all of the diseased animals. In the past this was a matter of the greatest difficulty, because the symptoms are so indefinite, in many cases, that the disease cannot be recognized even when the animal is in such a condition that it is dangerous to its associates. This difficulty has been overcome during the past few years by the use of tuberculin, a substance made from artificial cultures of the bacilli of tuberculosis. When a small amount of this substance is injected beneath the skin of a tuberculous animal a rise of temperature occurs within from six to sixteen hours, while if the animal is free from tuberculosis there is no unusual elevation of temperature. While this means of diagnosis is not absolutely infallible, it can be relied upon, when properly carried out, in nearly every case, and is the most accurate known method for diagnosing the disease. By the use of the tuberculin-test it is possible to discover and remove all of the infected animals in a herd; it only remains, then, to thoroughly disinfect the premises, improve the sanitary conditions, and prevent the introduction of other tuberculous animals, to keep the herd free from this disease. A second examination should always be made within six months or a year after the first one, in order to discover possible cases that were overlooked during, or that developed after, the first test. It has been shown by the experiments of Bang, in Denmark, and of a number of veterinarians in this country, that if this work has been done thoroughly, in the way indicated, the disease can be completely eradicated in herds.

Bovine tuberculosis is of extreme importance in so far as the health of cattle is concerned, because it is a more or less rapidly spreading, contagious, and fatal disease. But it is of still wider public importance because it may be contracted by people through consuming milk that contains bacilli of the disease. On account of this fact, the consumption of milk has been somewhat restricted and the market for milk and dairy products contracted. This has led the authorities of some States to adopt radical exterminative measures in combating this disease. The New England States have active commissions working under special laws and receiving appropriations for the purpose of inspecting herds and destroying tuberculous animals. In all cases some remuneration is given the owner to at least partly reimburse his loss. In Massachusetts the appropriations for this purpose amount to \$185,000. In New York this matter is looked after by a special committee of the State Board of Health. During the past year they have followed methods similar to those in operation in parts of New England. Quarantine measures have been adopted in some of the New England States, whereby it is necessary that all animals brought in from another State must be accompanied by a certificate from a veterinarian, based upon the tuberculin-test, showing freedom from tuberculosis, or submit to an examination with tuberculin at the point at which they enter the State. A law has been enacted in France during the past autumn requiring the examination with tuberculin of every

herd in which there is reason to think that tuberculosis exists, and all tuberculous animals are quarantined or killed.

Sudden Deaths. It happens occasionally that a number of cattle die suddenly from some unknown cause. The probable cause of these deaths, in many cases, is one of the diseases named above, but it may be that there are some diseases of which but little is known, or that certain poisons have operated to destroy the animals. It would be of great value to a proper understanding of such cases if they could be reported in as great detail as is possible to this office. Such reports might lead to important developments.

General sanitary measures seem yet to be the only safeguards in limiting the losses from hog-cholera and swine-plague. Cremation of the bodies of hogs dying from these diseases is the only true safeguard, while careless burial, throwing the carcasses in water-courses, is sure to perpetuate its existence and disseminate losses over widespread territory.

As to trichinosis, thorough cooking of all pork products is all that is necessary.

The sheep of Pennsylvania are very free from the ravages of scab, foot-rot, and parasitic diseases, so much more common in certain Western breeding districts.

The need of great care in the diagnosis of rabies, and the thorough study of suspected cases, and the resorting to experiments to determine whether the animal suffered from the same after the biting of others, is strongly urged.

The need of better methods for the lessening of great losses among the poultry interests from contagious and infectious diseases, so prevalent among them, is urged, and the wisdom of better informing the people of the State is suggested.

Virginia. Governor O'Ferral recently appointed the following members on the State Board of Veterinary Examiners: W. H. Harbaugh, V.S., of Richmond; E. P. Niles, D.V.M., of Blacksburg; George C. Faville, D.V.M., of Norfolk; Charles McCullough, D.V.S., of Howardsville; A. J. Burkholder, D.V.S., of Staunton. The appointments, which are for a term of four years each, beginning May 1, 1896, are made under the law passed during the last session of the General Assembly and approved February 27, 1896.

Michigan. The Jersey Cattle-breeders' Association at their meeting in Lansing, after discussing the subject of tuberculosis, gave forth the opinion that many valuable animals had been destroyed on the tuberculin-test, and destroyed without finding the presence of tuberculosis. We would like to know where, when, and what percentage they claim for these unusual statements?

Illinois. In a herd of thirty-eight, tested by State Veterinarian Trumbower, four responded, were killed, and found to be extensively affected with tuberculosis.

Minnesota. The Bowberg milk-case brought out a strong array of witnesses to the value of tuberculin as a diagnostic agent and the absence of danger in its use. Veterinarians Cotton, Reynolds, and Hess, and Dr. Hewitt, of the State board of health, all gave testimony on these points. The inspection of milk and dairies for Minneapolis has done an unlimited amount of good for that city in producing a purer and better milk-supply for her people.

Only one weak feature of the inspection laws exists, which it is hoped will be remedied by the next legislature, so that immediate destruction may be enforced of all animals suffering with tuberculosis.

Iowa. The efforts to establish a complete sanitary police for Iowa failed in the recent legislature. The committee having the matter in charge does not feel discouraged, but is already planning for a more active campaign in this direction next session, and with its support better organized it hopes to win the next battle.

Alabama. Montgomery has passed a city ordinance (to take effect October 1, 1896), establishing a public slaughter-house, at which all animals must be slaughtered. All animals must be inspected on foot and at the slaughter by an inspector, who must be a veterinarian. The ordinance also provides for inspection of all dairy herds which supply milk to the city.

National. Bulletin No. 11 of the Department of Agriculture gives some very important data and statistics relative to the dairy interests of the United States and the relative value of dairy products compared with other leading agricultural productions. Circulars 4 and 5 from the same department refer to the crossing of improved breeds of swine with the common hogs, or "razor-backs" of Florida, with a view of recovering some of the lost power and ability to resist the disastrous diseases of the western country. The second gives results of investigations into the infectious disease, designated entero-hepatitis in turkeys, which has proved so disastrous to the raisers of these birds in Rhode Island.

Army legislation. The *Black Hills Press*, of Meade County, South Dakota, in a favorable comment upon the passage of the present Army bill granting to veterinarians the rank of second

lieutenant, cannot understand why they are not granted similar recognition to the members of the Army Medical Service. A point well taken.

Canada. The House of Parliament at Ottawa, on March 27th, vigorously denounced the action of Great Britain in placing such restrictions on Canadian cattle as now exist, on the ground of receiving from that country cattle affected with contagious pleuro-pneumonia. Mr. Mulock in closing his remarks said forcibly: "Your contention is that you are keeping Canadian cattle out because of the existence of contagious pleuro-pneumonia in Canada. We respectfully submit to you as our united opinion that no pleuro-pneumonia exists in Canada, and consequently that your basis for legislation is not a good basis." Sir Charles Tupper reviewed the subject from the first scheduling in 1892, and ventilated thoroughly the unstable grounds and unfair position assumed by the British authorities on this matter. He well asked why was not the offer of Canada accepted, when she invited the mother-country to send her highest veterinary authorities to investigate on Canadian soil at the latter's expense, to satisfy themselves that such a disease was unknown to them as a cattle-growing country, and we might also add, what an anomalous position for a people to take, when for the past ten years their own country had been the worst pest-centre for the existence and perpetuation of this disease known. Why will not the government of Great Britain be honest with itself and fair with sister-countries, and say, We do not want your meat-products, not because they are not good, not because they are not cheaper than our own, but for no other reason than that their introduction will interfere with the business of our home raisers of cattle.

A WHITE colt, with red ears, by Palentine, has been dropped at Oak Hill Farm, near Nashville, and hundreds have visited the equine freak.

RECENT researches into the birth of 16,000 foals show that 97 colts were born to every 100 fillies; that up to the end of the third month of gestation the foetus is sexless, and the sex is determined by the bodily condition of the mother in the fourth and fifth months. If the mare and foetus be well nourished, the sex is likely to be a female.

SOCIETY PROCEEDINGS.

PROCEEDINGS FOR THE YEAR 1894-95 OF THE SOCIETY FOR THE STUDY OF COMPARATIVE PSYCHOLOGY IN CONNECTION WITH THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE OF MCGILL UNIVERSITY, MONTREAL.

(Continued from page 347.)

Mr. J. C. Hargrave followed with a paper on "Feigning Death," which habit is resorted to for various reasons by many animals, even as low in the scale as the insecta, and the simulation of death cannot always be considered a contrivance of cunning, being frequently the consequence of terror. Violent stimuli will produce a disorganization of nerve centres, so that nervous control is almost entirely in abeyance, and there may even be a complete cessation of vital activities and consequent death. Preyer ascribes the shamming of death as seen in insects to the exclusive influence of cataplexy, having observed even in crayfish the potentiality of this influence on the neuro-muscular system; but the fact should be borne in mind that no species of the insecta when shamming really assumes the attitude of death, so that shamming in these cases may be considered to be "an instinctive action to remain as motionless and inconspicuous as possible, and which has been developed in conformity with the law of natural selection," and in this opinion so great a student as Romanes concurs. This instinct we find well developed, along with protective resemblance in those animals which are not adapted for rapid flight from enemies. But this explanation will not hold good in the case of some of the higher animals, as for instance, the fox, and we have evidence that some animals feign death for the purpose not of escaping, but to deceive other animals. An instance was related of a pet bear, owned in the writer's family, which was in the habit of shamming to enable him the more easily to catch unwary fowls, and the same habit has been frequently reported as obtaining among monkeys. Romanes mentions the case of a captive monkey who, having been annoyed by crows stealing his rations, appeared one morning as if seriously indisposed, closing his eyes, drooping his head, and exhibiting other symptoms of illness. The crows taking advantage of his seemingly indifference approached with impunity, but no sooner had they come within reach than all signs of illness vanished and the cunning animal seized one unlucky bird and proceeded to pluck it with the most humorous gravity, and having completed the task threw the bird away. From this it would seem that the animal had a knowledge of what sickness meant, having probably observed other animals, and reasoned that simulation would be of service to him, and this theory of utility would apply to other vertebrate animals. As already shown, feigning may be caused by fright, the stimuli producing a loss of the power of co-ordination, and the animal remains motionless, so that the habit in general cannot be said to be due to any one cause in particular.

In the discussion which followed the reading of these papers, Mr. Zink asked what relation consciousness bore to the dominant and constituent parts. The President replied that consciousness was the direct outcome of

the molecular constitution of an organism. It is special arrangement that gives rise to consciousness; that is, there may be simpler forms than give rise to consciousness, but which develop into it.

An article on the "Psychology of Hypnotism," by Dr. Weir, and which recently appeared in the *American Naturalist*, was read by one of the members. The writer describes three stages of consciousness, viz., subconsciousness, inco-ordinate, and co-ordinate consciousness, and defined hypnosis as "a brown study accomplished by neurotic degenerations," but owing to the lateness of the hour there was no discussion on the subject.

The minutes of the previous meeting were read and adopted, and the addition of several new volumes to the Library was announced.

Mr. Alex. Cowan read a paper on "Æstheticism and Religion in Animals," first comparing the views of Huxley, Wilkes, and Herbert on the differences between man and the lower animals, and showing that some of the physical attributes of man are inferior to corresponding ones in animals. "His teeth," says Prof. Cope, "are thoroughly primitive." Compare his power of sight with that of the eagle or his olfactory sense with that of the dog, and one is forced to admit that in some respects, at least, the lower animals are superior to man. The progressive period of mental development of the monkey is short, and at an early age becomes stationary, but the same condition is seen, for example, in the negro, whose mental faculties reach the maximum point of development sooner than in the Caucasian. In ratio to the development of the hand we find appreciation of the beautiful, but, as shown by Darwin, there are animals without hands who also share in the æsthetic sense. Birds take pleasure in brilliant plumage and sweet sounds, and the feeling thus awakened plays an important part in the preservation and perfection of species through natural selection. "The decoration of its boudoir" by the bower bird would indicate the possession of this sense in a marked degree. The so-called bower is built of sticks, and adorned with feathers, shells, colored rags, and anything of bright color which may please the bird's fancy. Some of these objects are brought a considerable distance, and are of no use but to gratify the æsthetic tastes of the occupant; and this bower is not a nest in which eggs are laid or young ones reared, but serves as a salon for entertainment. The singing of birds implies a certain appreciation of melody, and dogs are by no means indifferent to the effect of music. The fertilization of many plants depends on the existence of color-sense in insects. Even the religious sentiment is faintly shadowed in the lower animals, who seek to win favor of those whom they regard as superiors, fawning and grovelling in adoration, or to crave pardon for some offence. One writer has said there is no difference between the negro who worships an animal and the dog that crouches at his master's feet. Animals fly to man for protection, as a believer does to his God. "This feeling of religious devotion," says Darwin, "is a highly complex one, consisting of love, complete submission to an exalted and mysterious superior, a strong sense of reverence, dependence, fear, hope, gratitude, and perhaps other elements. No being could experience so complex an emotion until advanced in intellectual and moral faculties to, at least, a moderately high level. Nevertheless we see some distinct approach to this state of mind in the deep love of a dog for his

master, associated with complete submission, fear, and perhaps other feelings." Romanes one day tied a long thread to a bone, which he gave to a Skye terrier to play with. He says: "After he had tossed it about for a short time I took the opportunity, when it had fallen a short distance from him, of gently drawing it away by means of the thread. Instantly his whole demeanor changed. His astonishment knew no bounds. He first approached it with nervous caution, but, as the slow receding motion continued and he became certain that the movement could not be produced by any force which he himself had exerted, his astonishment developed into fear, and he ran to conceal himself and watch at a distance the 'uncanny' spectacle." In this instance we have close observation, judgment, reason, and imagination, ending in the exhibition of superstitious fear—all the elements, in short, which constitute religious sentiment in its crudest form. Animals are afraid of darkness, also thunder, lightning, and other meteorological phenomena which inspire primitive man with awe, simply because they are of mysterious origin.

(To be continued.)

U. S. V. M. A.

THE officers of the Ohio State Veterinary Medical Association desire it to be known that it was the wish of the members that the question of meeting at Columbus, Ohio, or Buffalo, New York, be decided by vote, and that the change from Columbus to Buffalo could only be accomplished through a vote of the members filed with the Secretary. Of the nineteen members present at the last meeting of the State Association—all of whom were written to upon this point, and answers received by the Secretary from sixteen—fifteen voted to change from Columbus to Buffalo, therefore the semi-annual meeting will be held at Buffalo on September 1st, 2d, and 3d, in conjunction with the annual convention of the United States Association.

In the future all applicants for membership in the U. S. V. M. A. will be required to forward their initiation fee with the application. If the applicant is rejected the fee will be returned.

This year the reports of the State Secretaries will be of special interest, as instructions have been given to each one, on his acceptance of the office, directing the work of these officers in specific channels.

Already Detroit is in the field as a Western city for the meeting in 1897. As Kansas City launched its wish in this direction at Des Moines, there promises to be considerable rivalry for the place, particularly if California should enter the race again, and now that Treasurer Robertson has regained his wonted vigor, and no doubt will be with us at Buffalo in September, he may cling to his long-expressed wish that we shall cross the Rocky Mountains before the century ends, and thus have covered our whole country in reality as well as name.

There are rumors in the air that a closer allegiance to the code of ethics will be demanded of some of the members at the Buffalo meeting, and this should be so, or else the laws should be made elastic for all. Nothing breeds contempt for laws so much as ignoring their rigid enforcement with all who are amenable to them.

Dr. N. S. Mayo, of Kansas, will fill a place upon the programme for September next, the subject to be announced later.

The subject of tuberculosis will be allotted a place upon the programme and those aspects of the subject from the State's point of view, individually and collectively; the wisdom of compensation; interstate traffic; the influence of tuberculin; the adoption of compulsory police measures for its control; disinfection of premises, and those leading points only which are still unsettled and undetermined.

NEW YORK STATE VETERINARY MEDICAL SOCIETY.

Officers and Committees Elected at New York City, Sept. 5 and 6, 1895.

President, Nelson P. Hinkley, 395 Ellicott St., Buffalo; Vice-President, Thomas Giffen, 217 W. Fifty-eighth St., New York City; Secretary-Treasurer, Claude D. Morris, Pawling.

Board of Censors: W. L. Baker, Cortland; John Wende, 1595 Main St., Buffalo; R. S. Huidekoper, 154 E. Fifty-seventh St., New York City; Arthur O'Shea, 117 W. Forty-sixth St., New York City; Prof. James Law, Ithaca (Cornell University).

Committee of Arrangements: Claude D. Morris, Pawling; L. A. Robinson, Buffalo; George E. Gangloff, Buffalo; L. E. Willyoung, Buffalo; Samuel Somerville, Jr., Buffalo; J. P. Thompson, Niagara Falls.

Committee on Legislation: Nelson P. Hinkley, Buffalo; Claude D. Morris, Pawling; William Henry Kelly, Albany; James Law, Ithaca; Arthur O'Shea, New York City.

Committee on By-Laws: Claude D. Morris, Pawling; Wilson Huff, Rome; John A. Bell, Watertown.

Executive Committee: Nelson P. Hinkley, Buffalo; Thomas Giffen, New York City; Claude D. Morris, Pawling; L. E. Willyoung, Buffalo; William Henry Kelly, Albany; Wilson Huff, Rome.

County Secretaries: John A. Bell, Watertown, Jefferson Co.; W. L. Baker, Cortland, Cortland Co.; E. H. Hayden, Syracuse, Onondaga Co.; James Carnrite, Amsterdam, Montgomery Co.; Charles Cowie, Ogdensburg, St. Lawrence Co.; W. J. Wadsworth, Cobleskill, Schoharie Co.; J. M. Chase, Seneca Falls, Seneca Co.; E. L. James, Cooperstown, Otsego Co.; W. H. Carpenter, Johnstown, Fulton Co.; R. D. Austin, Schenectady, Schenectady Co.; J. A. Genung, Ithaca, Tompkins Co.; O. B. French, Honoeeye Falls, Monroe Co.; George D. Dowland, Auburn, Cayuga Co.; Wilson Huff, Rome, Oneida Co.; W. E. Stocking, Eagle Harbor, Orleans Co.; James McKee, Stapleton, Richmond Co.; E. H. Nodyne, Sodus, Wayne Co.; M. M. Poucher, Oswego, Oswego Co.; W. B. Ingalls, Mohawk, Herkimer Co.; D. S. Saylor, Glen Falls, Warren Co.; Arthur O'Shea, New York City, New York Co.; C. D. Morris, Pawling, Dutchess Co.; J. P. Thompson, Niagara Falls, Niagara Co.; William H. Kelly, Albany, Albany Co.; J. K. Sutterby, Le Roy, Genesee Co.; John A. Huhne, Kingston, Ulster Co.; W. D. Ambler, Chatham, Columbia Co.; George H. Berns, Brooklyn, Kings Co.; H. McWhinnie, Troy, Rensselaer Co.; L. E. Willyoung, Buffalo, Erie Co.; E. Lalowell, Yonkers, Westchester Co.; J. L. Ronan, Corning, Steuben Co.; R. C. Jones, Port Jefferson, Suffolk Co.

NEBRASKA VETERINARY MEDICAL ASSOCIATION.¹

THIS Association met January 13th at the Merchants' Hotel, Omaha, at 8 P.M. The members present were: Drs. A. T. Peters, Lincoln; H. L. Rammacciotti, Omaha; S. E. Cosford, Omaha; J. Anderson, Seward; V. Schaeffer, Tekamah; G. R. Young, Omaha; P. Tucker, Lincoln; J. L. Blackwell, Omaha; and A. T. Everett, South Omaha.

The first business taken up was the election of officers for the ensuing year, 1896, and the following gentlemen were appointed, viz.: Dr. A. T. Peters, President; Dr. J. Anderson, Vice-President; Dr. J. E. Blackwell, Treasurer; and Dr. A. T. Everett, Secretary. The Board of Censors was composed of the following gentlemen: Drs. H. L. Rammacciotti, G. R. Young, and V. Schaeffer.

After the election of officers Dr. A. T. Peters called the meeting to order and instructed the Secretary to read the "Constitution and By-laws" of the Association, and it was agreed that the constitution be adopted as heretofore, with the exception that the first meeting be held at the latter part of August, during the State fair week.

It was moved and seconded that a committee be appointed to draft a diploma of the Nebraska Veterinary Medical Association. The committee to consist of three members and the President, viz., Drs. J. E. Blackwell, H. L. Rammacciotti, G. R. Young, and A. T. Peters.

Other routine business having been gone through, the President then called on Dr. V. Schaeffer to read a paper on "Actinomycosis," which the Doctor handled in an able manner, and which called forth a very animated discussion on this important subject. Dr. Blackwell was then called on by the President to make a few remarks on the general outline of the "Federal Meat-inspection," which the Doctor kindly did. After a vote of thanks had been extended to the President, Dr. A. T. Peters, for the trouble and interest he had taken in the reorganization of the Association, the meeting adjourned.

VETERINARY ASSOCIATION OF MANITOBA.

THE annual meeting was held in Delmonico's Hall, Winnipeg, on the 20th and 21st of February last. The members present were Drs. Young, Manitou; Swenerton, Wawanesa; Ward, Selkirk; McNaught, Rapid City; McFadden, Emerson; Rutherford, Portage les Prairie; McGillivray, Manitou; Hinman, Little, Murray, and Dunbar, Winnipeg.

The following members constitute the Council for the current year: Drs. Rutherford, Torrance, Young, Thompson, Hinman, Swenerton, and Dunbar. The Council met and elected the following officers: President, Dr. Young, Manitou; Vice-President, Dr. Swenerton, Wawanesa; Secretary-Treasurer and Registrar, Dr. Dunbar, Winnipeg. Drs. Rutherford, Hinman, and Dunbar were elected examiners.

After the usual routine business, the time was devoted to the discussion of subjects of interest to the profession. Dr. McNaught exhibited a very ingenious truss for supporting a poultice applied to the knee or hock of a horse. Dr. Rutherford described, in a very interesting manner, a peculiar

¹ Reported for the JOURNAL by A. T. Peters.

case of a tumor, weighing six pounds, of the osteo-fibroma type, which he found deeply imbedded in the muscular tissue of a mare's leg. Other uncommon and interesting cases were related by Drs. Hinman, Swenerton, and Dunbar.

Dr. Ward read an instructive and carefully prepared paper on "The Hereditary Transmission of Tuberculosis," which was followed by a protracted and profitable discussion of the subject, participated in by Drs. Rutherford, Hinman, McNaught, and Dunbar. Dr. Wright, of Grenfell, N. W. T., who was present as a visitor, also took part in the discussion, and by his remarks contributed not a little to the interest of the meeting. A resolution was passed recommending the tuberculin-test for tuberculosis, as being a valuable diagnostic agent.

The meeting throughout was pleasant and highly edifying, and afforded ample testimony that one of the chief objects of the Association is being accomplished, namely, the elevation of the standard of the veterinary profession in Manitoba.

The semi-annual meeting of the Association will be held in Brandon in July.

MASSACHUSETTS VETERINARY ASSOCIATION.

THE regular meeting was held at 19 Boylston Place, Wednesday, February 26th, at 8 P.M., Dr. Parker, the President, in the chair. The following members were present: Drs. Beckett, Blackwood, Bunker, Burr, Cronan, Emerson, Hamilton, Lewis, La Baw, McLaughlin, Osgood, Parker, Pierce, Rogers, Sheldon, Winslow, and Winchester. Honorary member, Dr. Stickney. Minutes of last meeting were read and accepted after Dr. Burr had corrected his statement in regard to tuberculin, having it read "good" instead of "reliable."

The Secretary called the attention of the Association to the fact that the election of Drs. Frothingham and Cannon was illegal, not having been before the Association the length of time prescribed by the Constitution. Dr. Osgood then moved that we again ballot on these names. Carried, and they were unanimously elected.

Dr. Pierce reported the case of a mare six weeks in foal having dizzy spells when first starting on a drive; would have only one attack. After removing overdraw check from harness there was no more trouble.

Dr. McLaughlin reported an interesting case, the history of which is well known. Cow calved and cleaned all right over a year ago, following which she had a number of attacks of supposed indigestion. Last calf came two weeks before time, dead. Inside of one week showed dropsy of legs and abdomen. Diagnosed foreign body in heart. Autopsy showed wire three inches long through right auricle at apex. Abscess at point of entrance of wire. Dr. Burr saw in a post-mortem case the track of a wire from the second stomach to the pericardium; fluid and the wire in the pericardial sac. Dr. Emerson saw a cow that had been fed on lawn-grass; had a number of attacks of supposed indigestion; finally died, and a nail was found in the pericardium.

Dr. Beckett had a large horse with peculiar, sudden lameness; would point and rest on outer toe. No soreness in foot or at any point. Diagnosed

possible paralysis. Dr. Burr reported a similar case to that of Dr. Bryden. Dr. La Baw had a similar case. Horse had been cast; on attempting to rise, failed; rolled him over and he got up, but was unable to support body on that leg.

Drs. Bunker and Parker reported undesirable effect from calomel: swelling of lips and tongue and profuse salivation.

HOWARD P. ROGERS, M.D.V.,

Secretary.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

(Concluded from page 345.)

Afternoon session called to order by the President at 2.45 P.M., on March 3.

Dr. Hoskins called up the amendment to Art. V., Sec. 2, of the By-laws. Discussed by Dr. Ridge, who favored adhering to old rule. Dr. Hoskins thought we had given the members ample and fair trial; that inasmuch as the members do not respond to Secretary's letter, but sharing the profits, he wanted the amendment enforced. Dr. Zuill considered the action taken at the meeting illegal on account of absence of quorum; but the chair decided that the meeting was regularly called, therefore the action was legal. Dr. Zuill appealed from the decision, but the Association upheld the chair by a rising vote. Dr. Stanton favored something more stimulating in a literary way to the delinquents. Dr. Goentner considered it unfair to expel a member on account of absence at three consecutive meetings as long as dues remained paid, as some might be unable to attend on account of inability to secure a substitute. Dr. Rechtenwald said if the amendment was enforced he would be compelled to resign. Dr. Hoskins thought it would be an incentive to better attendance. Dr. Harger thought if a member had enough interest in the welfare of the Association he could not be kept away, barring sickness; but coercion to attendance was a bad incentive. The adoption of such an amendment would be equivalent to punishment for a personal transgression. Dr. Zuill thought it unconstitutional; that if a man pays his dues he is a member and could not be compelled to attend. The question was finally decided by a rising vote, 12 for and 16 against. Dr. Kooker then moved that Section 2, Article V., be stricken from the By-laws, which was carried as a resolution by Drs. Kooker, Zuill, and Harger.

Dr. Hoskins then, upon motion, read the report of the Committee on Legislation, which was accepted by the Association and ordered placed on file, and the Committee discharged. Discussion followed by Drs. Zuill, Hoskins, and Rechtenwald upon the matter of false registration, examination of applicants by Board of Examiners, insufficient remuneration, etc. It was moved and seconded that the Association would give the Committee on Legislation proper support in conducting necessary litigation.

The report of Committee on Sanitary Science and Police, on account of absence of chairman, Dr. Adams, was postponed until next day.

General discussion on subject of "Tuberculosis of Cattle" was then in order, and was opened by the chairman, Dr. Pearson. He spoke on the work of the State Live-stock Sanitary Commission, the plan adopted, etc. He believed in dealing with it conservatively as there is considerable opposition. Further discussed by Drs. Bridge, Conard, Jobson, Eves. Dr. Pearson, upon inquiry, answered that the sanitary measures adopted to prevent

the extension of the disease, after once testing, were thorough cleansing with hot water and soap, afterward spraying with solution of bichloride of mercury (1:1000), sunlight, and ventilation. Dr. Zuill again claimed that tuberculin is not an infallible agent, as it would give reactions in diseases other than tuberculosis. Dr. Hoskins said that the dairymen ought to be more careful as to personal cleanliness. Dr. Miller believed in thorough cleanliness, and described the sanitary arrangements at Fairfield Dairy, Essex County, N. J. Dr. Eves, of Delaware, believed in dairy-inspection as well as milk-inspection, where the former is not admissible.

The meeting then adjourned at 5.10 P.M., and closed the first day's session.

Second day's session. Called to order at 10.15 A.M., March 4, Vice-President Ridge in the chair.

Committee on Sanitary Science and Police, Dr. Conard, chairman, reported that outbreaks of glanders, tuberculosis, hog-cholera, the usual influenza, strangles, and epizootic abortion had occurred; the latter he considered the cause of more loss to dairymen than tuberculosis. Upon motion, the report of the Committee was received and ordered placed on file, and the Committee discharged. Discussion opened by Dr. Hoskins, followed by Drs. Goentner, Conard, Harger, Zuill, Rechtenwald, Michener, Jobson.

Report of Committee on Legislation, by Dr. Hoskins, then followed. Report was accepted, on motion, and ordered filed, and Committee discharged. It was moved by Dr. Kooker and seconded by Dr. T. B. Rayner, that a vote of thanks be tendered Dr. Hoskins for his valuable services in the interest of the profession, which was carried unanimously by a rising vote; Dr. Hoskins accepted the offering gratefully.

The reading of papers being in order, the President called upon Dr. J. C. Michener for his paper on the "Pleasure of Being a Veterinarian;" Dr. James B. Rayner on "Osteoporosis;" Dr. W. L. Rhoads on "Pathogenesis and Development of Disease;" Dr. W. L. Zuill, "Description of the Operation of Cunean Tenotomy;" Dr. Harger, "A Description of the Operation of Median Neurotomy;" Dr. Pearson, "Description on the Use of Barium Chloride." The papers as well as the descriptions, to say the least, were exceedingly edifying and enjoyed by all present. The discussion that followed on the several topics was participated in by Drs. Kooker, Hoskins, Michener, Luson, Conard, Williams, Goentner, Miller, Ridge, Rechtenwald, Helmer, Harger, Eves, and Zuill.

Dr. C. H. Magill handed in his resignation, which was, in accordance with the rules, received and referred to the Board of Trustees.

Dr. W. B. Atkinson, editor and publisher of *Public Health*, asked for the proceedings of the meetings for publication, which, upon motion, were ordered to be furnished.

W. G. BENNER, V.S.,
Recording Secretary.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

THE regular meeting was called to order at 9 P.M., April 7th, at the Academy of Medicine, by the Vice-President, Dr. Giffen, who expressed sincere regret at the circumstances which called him to fill the President's chair, Dr.

Huidekoper's serious illness. On roll-call the following members responded: Drs. Bretherton, E. C. Cattanach, J. S. Cattanach, J. L. Cattanach, Jr., Delaney, Dair, Ellis, Ferster, Finlay, Giffen, Gill, Hanson, Jackson, Johnson, Knott, Lambkin, Lellman, Machan, MacKellar, Neher, O'Shea, Ryder, Sherwood, Serling, and Turner (25).

Dr. Gill, Chairman Board of Censors, offered the resolution that whereas Dr. S. K. Johnson, by contracting with the Mutual Live-stock Benefit Insurance Company (?), has violated Article VII. of the Code of Ethics; therefore, be it resolved that the Board of Censors recommend to the Association that if the said Dr. S. K. Johnson does not show satisfactory evidence of having resigned and severed all connection, directly or indirectly, with the said insurance company on or before October 15, 1896, he be expelled from membership of this Association. The court records not having been produced in the case of Dr. Turner *vs.* Dr. Finlay, as was ordered at the last meeting, the charges against Dr. Finlay were dismissed and he was honorably acquitted. Owing to the absence of Dr. Glover from town, his case was laid over until the next meeting. Whereas, it has come to our knowledge that one or more members are directly or indirectly connected with live-stock insurance companies; therefore, be it resolved that all members so connected will either sever their connection with such companies or suffer expulsion. Moved and seconded that the report be accepted; carried. Moved and seconded that the secretary be authorized to notify any members who have any connection with insurance companies to sever such connection, according to report of Board of Censors; carried.

Committee on Legislation (Dr. O'Shea, Chairman) reported that the Cole Amendment Bill is to go into the Senate next week, and that the previous Cole Bill is killed. In reference to resolutions which were to be offered to the several city departments, and be introduced at Albany, the doctor reported that he had been advised that it was too late to pass that bill this year, and stated that association's counsel suggest that the committee see the heads of the various departments before introducing the bill at Albany, and thereby secure their mutual co-operation. Dr. Gill suggested to the meeting that the Civil-service Commission be conferred with on this matter, which suggestion was approved by the members. In reference to the Jury Bill, Dr. O'Shea reported that he had had Senator Sullivan's positive assurance that the bill would come out. Moved and seconded that the report be accepted; carried.

Dr. Neher reported a few cases of flatulent colic, in which he resorted to puncture of the stomach with good results; claiming that puncturing of the stomach would often save cases that could *not* be saved by puncturing in the flank; that eructations of gas were an indication for stomach puncture, and that point most resonant on percussion, just posterior to the cartilage of prolongation of the sternum, being the seat of puncture.

Dr. Hanson reported a case of fatty tumor weighing seven and a quarter pounds, which he removed from the sternal region just posterior to axilla in an Irish setter dog, which he had been called in consultation to see with Dr. Jackson.

A number of interesting cards issued by so-called veterinary surgeons were read by Dr. Neher, and referred to the Judiciary Committee for investigation. Moved and seconded that the secretary be authorized to communicate with the Secretary of the State Association and with Professor Law, of

Cornell University, enlisting their aid and co-operation with the County Association in securing a proper guardian of the interests of the veterinary profession of New York State at the Capital while the legislature is in session next year; carried. Moved and seconded that the secretary secure the list of registered men in New York County obtained by the Judiciary Committee, and have it printed; carried. Moved and seconded that the meeting adjourn; carried.

ROBERT W. ELLIS, D.V.S.,
Secretary.

WYOMING VALLEY VETERINARY MEDICAL ASSOCIATION.¹

THE annual meeting was held at the Exchange Hotel, Wilkesbarre, Friday evening, April 24, 1896. The meeting was called to order at 8 P.M. by President Dr. Butterfield, of Montrose. The following members responded to roll-call: Drs. Butterfield, Mead, Church, Helmer, Hewitt, and Timberman, also Dr. Osborne, of Wilkesbarre, an applicant for membership. The minutes of the last meeting were read and approved.

The report of the Committee on Sanitary Science and Police brought out an interesting discussion on tuberculosis.

Dr. Church reported a case of "Fracture of Metatarsus." There was also a report by Dr. Butterfield of some interesting cases of "Malignant Catarrh" in cows.

Dr. Helmer then gave a talk on "Hog-cholera and Swine-plague." This was not written out in the form of a paper, but was a talk from notes and headings. The doctor handled the subject with much detail and in a manner which showed that he must have given the matter considerable thought and study. He defined the two diseases, and dwelt at length on the differential characteristics of each, with the best manner of handling an outbreak, means of disinfecting premises, isolating, etc. An animated and instructive discussion followed, which was participated in by all present.

This being the annual meeting election of officers followed. Dr. Butterfield was selected President; Dr. Mead, Vice-President; Dr. Church, Secretary and Treasurer. Board of Trustees or Censors, Drs. Helmer, Sturge, and Timberman.

On motion, the meeting adjourned to meet at Montrose on the last Friday evening in July.

Dr. Osborne was admitted to membership.

PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

THE Pennsylvania State Board of Veterinary Medical Examiners held their first examination at Philadelphia on April 20th and 21st. By courtesy of the Mayor of the city, the examinations were held in the civil-service examining-rooms in the City Hall, and afforded every facility for the completion of the work as well as the comfort and convenience of the applicants. The examination commenced at 10 A.M. each day and lasted until 6 P.M., with an hour recess at noon. The entire board was present.

¹ Reported for the JOURNAL by Dr J. H. Timberman.

Some fourteen applicants presented themselves, representing the Ontario Veterinary College, New York Veterinary College, and National Veterinary College. Some thirteen subjects for examination, designated by the law, were grouped to make eleven and were all written; fifteen questions were submitted on each subject, ten to be answered.

Of the fourteen applicants three were successful and eleven failed. The names of those passing and who received the license of the board were as follows: Dr. Elmer Seitz, Seitzland, Pa., graduate of the National Veterinary College; Dr. W. R. Jobson, Franklin, Pa., graduate of the National Veterinary College; Dr. Wm. S. Longacre, Mantz, Schuylkill County, Pa., graduate of the Ontario Veterinary College.

The Board after thorough consideration of the matter decided to leave it optional with the applicants who failed as to whether they should elect to take over again the whole examination, or only those subjects on which they had failed. In the event of choosing the latter the markings on the subjects passed to count in computing the general average (65 per cent.) to entitle to license.

The Board authorized the immediate prosecution of three violators of the Act, and decided upon the most vigorous action in dealing with all violations of the several provisions of the Act. Every prothonotary in each county of the State has been personally notified to register none without a license of the Board, bearing the State seal; and in every county of the State a qualified veterinarian will be designated to look after any violators or violations of the provisions of the Act. An arrest has been made in York County, and the violator is now under bail, and the most vigorous prosecution will be pursued in sustaining the Act, in order that the value of the provisions of this law shall be fully tested.

DEPARTMENT OF PUBLIC SAFETY, PHILADELPHIA.

CIVIL-SERVICE EXAMINATION QUESTIONS FOR CONSULTING VETERINARIANS,
APRIL 2, 1896.

1. What diseases are directly transmissible from animals to men through consumption of meat? 2. What conditions render meat dangerous as food where disease is not directly transmissible? 3. Describe the causes and lesions of actinomycosis. 4. What is "monkey-veal," and in what way is it objectionable? 5. How may the approximate age of a veal-carass be determined? 6. What are the lesions of hog-cholera? 7. What organs are chiefly affected in tuberculous hogs? 8. How may trichinosis of hogs be recognized? Give the method of examination in detail? 9. Mention the various parts of the body that may be the seat of tubercles in cattle, in the order of the frequency of their infection? 10. How may horse-meat be distinguished from beef?

MONTREAL VETERINARY MEDICAL ASSOCIATION.

Resolutions on the death of Dr. Campbell, Class '92 (McGill). Whereas, it has pleased an allwise Providence to remove from our midst a professional brother in the person of the late Dr. Donald Campbell; be it *Resolved*, That

this Association by his death loses an honored member, esteemed alike for his devotion to the cause of the profession, his upright conduct and genial nature; and be it *Resolved*, That a copy of these resolutions be spread upon the records of the Association; and be it *Resolved*, That a copy of these resolutions be forwarded to the family of our deceased brother. Signed on behalf of the Association, M. A. Dawes, D.V.S.; F. W. Kee, J. Anderson Ness, *Committee*.

COMMENCEMENT EXERCISES.

OHIO VETERINARY COLLEGE.

THE Commencement Exercises were held in the college building, Wednesday evening, March 18th. The audience was highly entertained by eloquent speeches by Profs. Frederick Kebler and J. Francis Jones. Prof. George E. Twitchell delivered the valedictory address, and Dr. L. P. Cook presented the diplomas. A banquet concluded the exercises, at which all present availed themselves.

The following are the graduates: George E. Tribou, Owingsville, Ky.; Henry Loth, Cincinnati, O.; D. J. Cargill, Port Jefferson, O.; M. P. Freed, Sharon, Pa.; Butler Smith, Greensburg, Ind.; L. W. Hamilton, Greenville, Pa.; Roy N. Drake, Oakley, O.

CHICAGO VETERINARY COLLEGE.

On March 24th the Thirteenth Annual Commencement Exercises were held in the College auditorium. On the evening previous a banquet was tendered by the trustees to the faculty and graduating class at the Sherman House, and a most enjoyable evening was spent. The week preceding the date of the graduating exercises was taken up by the final examinations, the results of which were that twenty-eight students passed. Of this number, eight passed in honors. Dr. E. J. Davidson received the gold medal of the college for the highest general average. Dr. Davidson also received the prize for the highest standing in theory and practice. Dr. E. Jentsch won the prize for the best standing in anatomy, and Dr. Walter Bolton the prize for the best examination in chemistry.

On the evening of the commencement exercises a large audience assembled in the auditorium of the college building. The lecture-room was tastefully decorated for the occasion, and many beautiful floral tributes were brought by admirers of the successful students. The chair was occupied by Dr. A. H. Baker. The other members of the faculty occupying the rostrum were Jos. Hughes, M.R.C.V.S.; Finley Ellingwood, M.D.; C. E. Sayre, M.D., D.V.S.; J. F. Ryan, M.D.C.; A. R. Edwards, M.D.; Geo. S. Baker, D.V.S.; E. L. Quitman, M.D.C.; M. R. Trumbower, D.V.S.; and A. S. Alexander, V.S.F.H.A.S. Among the visiting veterinarians who occupied seats on the platform were Drs. Olof Schwarzkopf, C. A. White, A. McBride, F. S. Lambert, A. Savage, N. G. Bailey, and others. The Chair-

man commenced the proceedings by reviewing at length the progress of the institution since its organization in 1883, and in the course of his address stated that this was a most fitting time to announce that henceforth the college course would be extended from two to three sessions, covering three years instead of two as heretofore. He wished at the same time to make the statement that the Chicago Veterinary College eight years ago was the first of the two-year schools to agitate the question of extending the course to three years. At that time this school corresponded on this subject with some of the most prominent of the older two-year schools, but our communications were with one exception entirely ignored, and even in the case of the exception the proposition was declared premature.

Having congratulated the members of the graduating class on their successful completion of the course, he conferred on each member the degree of Doctor of Comparative Medicine and presented the diplomas. The class valedictorian, Dr. A. C. Worms, then delivered his address, and was followed by Dr. A. S. Alexander on behalf of the faculty. Dr. E. P. Flack delivered the class prophecy. Dr. Schwarzkopf then addressed the faculty and graduates, and in doing so he highly complimented them on the change from a two to a three-session course. He predicted that it would materially add to the prestige which the Chicago Veterinary College already had.

The following is the list of graduates and their present location: W. Bolton, Waukesha, Wis.; R. L. Brown, Janesville, Wis.; C. E. Brownback, Pleasant Plains, Ill.; O. F. Butterfield, Leithton, Ill.; E. J. Davidson, Grand Forks, N. D.; Edward Dickinson, Fayette, Iowa; G. K. Dodson, Los Angeles, Cal.; F. A. Dolton, Dolton, Ill.; Henry F. Eckert, Reeseville, Wis.; E. R. Flack, Milwaukee, Wis.; J. W. Foster, La Fayette, Ind.; D. J. Halloran, Hortonville, Wis.; E. M. Herrin, Highland, Ill.; J. G. Hope, Chicago, Ill.; E. Jentzsch, Chicago, Ill.; E. A. Johnson, Platteville, Wis.; M. H. Kyle, Highland, Ill.; N. W. Kyle, Colfax, Ill.; J. A. McGarry, Milwaukee, Wis.; W. J. Malone, Springdale, Wis.; F. McCoy, Lake Odessa, Mich.; C. G. Nelson, Chicago, Ill.; J. H. Pear, Chicago, Ill.; F. R. Pierce, Dows, Iowa; F. P. Scott, Petersburg, Ill.; Wm. Voss Kiel, Wis.; C. H. Whitwell, Dubuque, Iowa; A. C. Worms, Chicago, Ill.

MCGILL UNIVERSITY.

THE annual meeting for the conferring of degrees in comparative medicine and veterinary science was held in the William Molson Hall, McGill University, on March 27th, and was presided over by Mr. J. R. Molson. Among the governors present were, including Principal Peterson and Sir William Dawson, Professor Clark Murray, Mr. S. Finley, Dr. W. I. Shaw, Mr. Justice Davidson, Mr. Justice Archibald, Dr. Craik, dean of the medical faculty, Professors Wesley Mills, Girdwood, McEachran, dean of the faculty of comparative medicine and veterinary science; Dr. Charles McEachran, Professors Baker, Penhallow, and Adami, Mr. J. Fleet, Drs. Deeks, Morrow, Johnson, Ruttan, Martin, Mr. W. C. McDonald, Rev. J. Clarke Murray, and Mr. C. J. Gould. Drs. A. W. Clement, of Baltimore, and J. M. Parker, of Haverhill, Mass., two graduates of the University, also occupied seats on the platform.

After prayer by Rev. J. Clarke Murray, Principal McEachran read the re-

ports of the sessions of 1895 and 1896, after which he read the list of those who had passed the examinations in the order of merit.

Graduating Class. James E. Craik, Harri H. Dell, John Greer, Charles H. Higgins, Fred. W. Kee, Samuel Macnider, John J. McCarry, Edward H. Morris, John A. Ness, Samuel C. Richards, and Ernest C. Thurston.

Prize-winners. Veterinary Medicine and Science, H. H. Dell; Anatomy, R. G. Matthews; Cattle Pathology, H. H. Dell; Cynology, H. H. Dell; Pharmacology and Therapeutics, H. H. Dell; Botany, W. B. Wallis; Chemistry, B. B. Killam; Physiology, B. A. Sugden. For the best general examination in all subjects, silver medal, H. H. Dell.

Extra prizes were also awarded as follows:

For the best essay read before the Veterinary Medical Association: 1st, H. H. Dell. Second and third prizes are added together and divided between Messrs. Kee, Higgins, and Ness.

For the best essay read before the Society for the Study of Comparative Psychology: R. G. Matthew; 2d, H. H. Dell; 3d, F. W. Kee. The first-year prize was won by J. P. Spanton.

Professor Adami's prize of \$50 for original pathological research, open to students in the final years in human and comparative medicine, divided between C. H. Higgins, B.Sc., Comp. Med., and Mr. R. H. Martin, Human Med., Mr. Higgins's work being on an epizootic of chicken cholera near Montreal.

Acting Secretary Brakenridge then administered the oath to the graduating class, and was followed by Principal Peterson, who performed the capping.

The valedictory address was delivered by Harri H. Dell, who, at considerable length and in eloquent terms, traced the history of veterinary science from the earliest stages down to the discovery of printing, when it had received a great stimulus. He also expressed the hope that a post-graduate course would be established by McGill University at an early date. In conclusion, Dr. Dell referred to the graduating class of 1895-96, and proffered some good advice to the students now entering upon the study of their profession.

Professor Wesley Mills¹ replied to the valedictory to the graduates.

Principal Peterson then made a few remarks referring to the excellent addresses of Dr. Dell and Professor Mills, and in the name of the professors of the University tendered his good wishes to the graduates for their future success in life; also expressing the hope that the desire of Principal McEachran for closer affiliation with McGill would be realized, and said he had no doubt the University would do justice in extending the work of the college.

The proceedings closed with benediction by Dr. Shaw.

ONTARIO VETERINARY COLLEGE.

The closing exercises were held in the college building, Toronto, on Saturday, March 28th, and were presided over by Prof. Andrew Smith. Among those present with him on the platform were Lieutenant-Governor Kirkpatrick, Robert Jaffray, John Aikins, R. J. Score, Dr. Duncan, Dr. Sweetapple, W. W. Withrow, Dr. J. O. Orr, and others.

Professor Smith addressed the students, calling attention to the fair attend-

¹ See page 337.

ance at the college this year despite the depression, also referring to the fact that the veterinary profession was improving at the present time.

Dr. Duncan then read the list of graduates and prize-winners.

Graduates: William Agnew, Belgrave, Ont.; Fred. A. Armstrong, Fergus, Ont.; T. H. Agnew, Evanston, Ill.; Simon Beattie, Waterloo, Wis.; R. J. Besteel, Grafton, North Dakota; John F. J. Black, Dublin, Ireland; Paul Dudley Bray, Cannington Manor, Assa.; Arthur Brechter, Beaver Dam, Wis.; William G. Bunnell, Heywood, Manchester, Eng.; Basil Aubin Brown, Highbury, London, Eng.; Francis J. Braund, McGregor, Man.; Patrick Cain, New Perth, P. E. I.; Merton J. Chrisman, Frewsburg, N. Y.; John L. Clark, Stratford, Ont.; Keller Lark, Cooperstown, N. Y.; Edgar W. Culley, Avon, N. Y.; Herbert Caldwell, Louisville, Ky.; John Cramer, Elwood, Ind.; Robert H. Craig, Bushton, Ill.; John A. Campbell, Teeswater, Ont.; Edward Dingman, Maplewood, Ont.; Richard A. Dennis, Adams, N. Y.; John R. Donahue, St. Thomas, Ont.; Charles H. Drake, New Haven, Conn.; F. J. De Land, Clinton, N. Y.; A. F. Elliott, Grandin, North Dakota; Henry T. Ferguson, Lake Geneva, Wis.; John B. Finch, Ramseys, New Jersey; Albert B. Gay, Randolph, Vt.; D. F. George, Overton, O.; John F. Gillespie, Ridge Farm, Ill.; William J. Grady, Quincy, North Dakota; N. O. Gilbert, Brooklyn, N. Y.; A. Gibson, Berlin, Ont.; Leopold Hay, Warsaw, Poland; Charles Haas, St. George, Ont.; William W. Hall, Leeds, P. Q.; Albert B. Hecker, Albany, N. Y.; J. B. Hill, Canandaigua, N. Y.; Roy F. Hoadley, Yorkville, Ill.; Walter E. Howe, Delphi, N. Y.; Walter N. J. Hurt, Matlock, Bath, Eng.; Alfred P. Husband, Nassagaweya, Ont.; T. M. Hadwen, Wheatland, North Dakota; George R. Inglis, Campbellville, Ont.; Johnson J. Irwin, Sheffordvale, Que.; Roy E. Jackson, Tyler Hill, Pa.; P. H. Johnson, Racine, Wis.; J. E. Johnson, Texas, O.; Elmer H. Judkins, Lake Mohawk, N. Y.; Chester P. Keith, Bridgewater, Mass.; Thomas Le Roy Kelly, Lakeside, O.; John C. Kingan, Pittsburg, Pa.; Rudolph Kjerner, Rochester, Minn.; William H. Kenwell, Cuba, N. Y.; John Lawrason, St. George, Ont.; Harry L. Leberman, Meadville, Pa.; William S. Longacre, Mantz, Pa.; J. T. Leary, Elliptown, N. Y.; Newton G. Le Gear, Imlay City, Mich.; John Dennis Macdonald, Jr., London, Eng.; Robert W. McDonald, Jackson, Mich.; Alexander J. McKay, Tavistock, Ont.; Peter McNeal, Shickshinny, Pa.; C. H. McGillicuddy, Lewiston, Me.; Daniel Maher, Godfrey, Ill.; H. E. Marshall, Ottawa, Ont.; G. R. C. Merriam, Negril, Jamaica, W. Indies; Sheard Moore, Lowell, Mass.; Lemuel Mulligan, Ottawa, Ont.; W. N. Neil, Tower Hill, Ill.; Brittain E. Nevel, Huntersville, Pa.; Lewis A. Nutting, Syracuse, N. Y.; John Oliver, Jr., Columbus, Miss.; J. D. Paxton, St. George, Ont.; H. C. Peters, Greenleaf, Minn.; J. Orville Reed, Danville, Pa.; Andrew W. Reilly, Grand Valley, Ont.; Llewellyn T. Richards, Granville, O.; James L. Riddell, Denver, Col.; Peter A. Robinson, Emerson, Man.; Louis D. Regan, Emporia, Kan.; Herman R. Ryder, Delphi, N. Y.; F. G. Scammel, Lafayette, N. Y.; Charles A. Seaton, Bloomington, Ont.; S. L. Shaw, Summer Hill, Ill.; Geo. F. Sheppard, Edinburgh, North Dakota; Thomas Veitch Simpson, Yorkton, N. W. T.; John J. Sparrow, Victoria, B. C.; Ray J. Stancliff, Derby, N. Y.; Wesley C. Stephens, Newmarket, Ont.; Donald A. Stewart, Ivan, Ont.; John H. Summers, Oswego, N. Y.; Zera Strong, Carleton Place, Ont.; James A. Stevenson, Morden, Man.; Francis C. Simpson, Bridlington Quay, Eng.; J. W. Tooley, Lansing, Ont.; J. Turn-

bull, Lowville, Ont.; J. H. Ellsworth Vrooman, Vroomanton, Ont.; Richard E. Willis, Brampton, Ont.; Arthur R. Walsh, Buffalo, N. Y.; William Walker, Kingston, Ont.; M. A. Whinster, Portage la Prairie, Man.; E. J. Will, Moore's Store, Va.; Arthur Edward Williamson, Queenstown, Ireland; David B. Wilson, London, Ont.; George E. Wilson, Carleton Place, Ont.; F. Lockwood-Wingate, Kingston, Jamaica, W. I.; R. W. Wilkinson, Drumbo, Ont.; A. C. Woods, Council Bluffs, Iowa; A. G. Young, Bristol, Quebec.

Seniors by Departments: Pathology (seniors): silver medal, 1st prize, H. R. Ryder; 2d prize, F. Lockwood-Wingate; 3d prize, R. J. Stanclift, P. D. Bray. Honors: F. A. Armstrong, J. F. J. Black, J. L. Clark, E. H. Cully, H. Caldwell, R. A. Dennis, J. B. Finch, H. T. Ferguson, L. Hay, W. N. J. Hurt, W. E. Howe, G. R. Inglis, J. E. Johnson, J. Johnson, R. Kjerner, C. P. Keith, G. R. C. Merriam, A. J. McKay, W. N. Neil, L. A. Nutting, J. D. Paxton, J. L. Riddell, L. T. Richards, H. C. Peters, P. A. Robinson, T. V. Simpson, F. C. Simpson, C. A. Seaton, D. A. Stewart, J. Turnbull, J. H. E. Vrooman, A. R. Welsh, G. E. Wilson, E. J. Will, A. G. Young.

Materia Medica (seniors): 1st prize, J. F. J. Black; 2d prize, H. F. Ferguson and F. L. Wingate (equal); 3d prize, C. P. Keith. Honors: P. D. Bray, J. P. Fitzgerald, H. E. Marshall, G. R. C. Merriam, R. J. Stanclift, F. C. Simpson, T. V. Simpson.

Chemistry (seniors): 1st prize, F. C. Simpson; 2d prize, R. J. Stanclift; 3d prize, B. A. Brown. Honors: J. F. J. Black, R. H. Craig, E. M. Culley, J. B. Finch, J. P. Fitzgerald, J. E. Johnson, C. P. Keith, G. R. C. Merriam, L. D. Ryan, H. R. Ryder, D. A. Stewart.

Morbid Anatomy (seniors): Prize, H. R. Ryder. Honors: P. D. Bray, R. J. Stanclift, G. R. C. Merriam, J. R. Donohue, W. E. Howe, J. F. J. Black, F. L. Wingate.

Anatomy (seniors): 1st prize, silver medal, R. J. Stanclift; 2d prize, J. F. J. Black; 3d prize, E. W. Culley. Honors: Wm. Agnew, P. D. Bray, B. A. Brown, W. G. Bunnell, R. H. Craig, J. L. Clark, M. J. Chrisman, Herbert Caldwell, J. R. Donahue, R. A. Dinnis, T. H. Ferguson, W. E. Howe, W. W. J. Hurt, C. A. Haas, W. W. Hall, J. B. Hill, L. Hay, G. R. Inglis, J. E. Johnston, E. H. Judkins, R. E. Jackson, A. Kjerner, C. P. Keith, W. S. Longacre, G. R. C. Merriam, A. J. McKay, J. Oliver, J. D. Paxton, H. R. Ryder, P. A. Robinson, T. V. Simpson, F. C. Simpson, S. L. Shaw, J. J. Sparrow, G. T. Sheppard, D. A. Stewart, J. Turnbull, A. R. Walsh, E. J. Will, R. E. Willis, F. L. Wingate, A. G. Young.

Dissected Specimens (seniors): Gold medal, given by Toronto Industrial Exhibition Association, J. F. J. Black; 2d prize, \$30, F. C. Simpson.

Eutozoa (seniors): P. D. Bray. Honors: W. Agnew, S. Beattie, J. F. J. Black, J. A. Campbell, R. H. Craig, E. W. Culley, L. Hay, W. E. Howe, G. R. C. Merriam, J. Oliver, J. D. Paxton, S. L. Richards, H. R. Ryder, T. V. Simpson, R. J. Stanclift, S. L. Shaw, F. C. Simpson, D. A. Stewart, F. L. Wingate, A. C. Woods.

Physiology (seniors): 1st prize, silver medal, P. D. Bray; 2d prize, G. R. C. Merriam; 3d prize, T. V. Simpson. Honors: J. F. J. Black, B. A. Brown, R. H. Craig, E. W. Culley, J. R. Donahue, J. B. Finch, L. Hay, W. E. Howe, G. R. Inglis, J. D. Macdonald, Wm. Neill, H. R. Ryder, S. L. Shaw, R. J. Stanclift, J. Turnbull, A. C. Woods, F. L. Wingate.

Best general examination : G. R. C. Merriam, gold medal given by the Ontario Veterinary Medical Association. Honors : J. F. J. Black, T. H. Ferguson, Leopold Hay, W. N. Neil, L. T. Richards, H. R. Ryder.

Juniors by Departments. Pathology (juniors) : 1st prize, W. H. Wheeler; 2d prize, G. E. Totten; 3d prize, W. J. Meloche and E. L. Bertram (equal). Honors : H. Buss, F. W. Bryant, G. C. Bowen, W. Brennen, J. B. Campbell, W. Caister, G. R. Caldwell, R. C. Cliff, T. J. Cooper, C. W. Clark, J. Dodd, G. P. Hayter, G. Hilton, F. Hodgson, J. Johnston, J. J. Keliher, F. A. Messinger, A. A. McLachlan, J. A. McKinnon, W. O. McHugh, G. A. McKenzie, I. S. Norton, R. D. Orr, T. M. Owen, J. H. Pierce, H. Pegan, J. R. Rochester, W. W. Richards, G. Rowencroft, J. Miller, W. McElroy, R. Marshall.

Anatomy (juniors) : 1st prize, silver medal, G. E. Totten; 2d prize, R. D. Orr; 3d prize, R. C. Cliff and G. R. Caldwell (equal). Honors : Henry Buss, J. B. Campbell, Thomas Cooper, W. Caistor, George Hilton, Fred. Hodgson, J. N. Johnston, J. J. Keliher, A. McLachlan, W. A. McHugh, W. F. McElroy, W. J. Meloche, J. P. Miller, I. S. Norton, W. W. Richards, G. V. Rowcroft, G. P. Statter, J. W. Will, S. A. H. Winsloe.

Physiology (juniors) : 1st prize, silver medal, R. C. Cliff; 2d prize, G. Hilton; 3d prize, W. O. McHugh. Honors : C. W. Clark, J. J. Keliher, J. P. Miller, W. J. Meloche, W. W. Richards, G. V. Rowcroft, W. H. Wheeler.

Chemistry (juniors) : 1st prize, George Hilton; 2d prize, G. V. Rowcroft.

Histology and Microscopy (juniors) : 1st prize, T. J. Cooper; 2d prize, C. W. Clark; 3d prize, R. Cliff. Honors : E. Bertram, C. H. Bugbee, F. W. Bryant, T. W. Brown, G. R. Caldwell, J. B. Campbell, H. Chaney, J. Dodd, W. H. Erwin, G. J. Grange, G. R. Hayter, R. C. Harris, G. Hilton, F. Hodgson, J. N. Johnston, J. J. Keliher, G. A. McKenzie, W. F. McElroy, Wm. McHugh, J. A. McKinnon, A. A. McLachlan, R. Marshall, W. J. Meloche, F. G. Messinger, J. S. Norton, R. D. Orr, T. Owen, J. H. Pierce, H. Pegan, W. W. Richards, J. R. F. Rochester, G. V. Rowcroft, G. Statter, A. E. Tweedle, C. A. Taylor, J. A. Winsloe.

Primary Examinations. Anatomy : F. G. Atwood, A. McK. Brock, A. E. Dennis, Joseph Gregg, R. J. Marion, W. D. Monk, W. H. Orme.

Materia Medica : J. P. Fitzgerald, H. F. Hartnett, G. H. Munroe, W. H. Orme, G. A. Wehr.

After the presenting of the prizes by Lieutenant-Governor Kirkpatrick, he gave a short and congratulatory address to the students, paying a warm compliment to the college on the instruction imparted. He believed in the future skilled veterinary surgeons would be more in demand than ever. That the necessity for a thorough and scientific inspection of all dairies and abattoirs was becoming recognized, therefore a new field was being opened for employment.

Several other gentlemen gave short and interesting addresses.

At the close of the proceedings Mr. J. E. Johnson, president of the graduating class, came forward, and, after reading an address to Professor Smith, presented him with a magnificent picture of the class. Professor Smith in a short reply expressed his thanks to the students for this expression of their good feeling toward himself and the college.

NEW YORK COLLEGE OF VETERINARY SURGEONS.

THIS year an innovation was inaugurated, and the graduating class, numbering twenty-nine, were summoned to the college hall at 7 P.M. on April 1st, and, after suitable opening remarks, Prof. H. M. Biggs, President of the Board of Trustees, gave to each graduate the oath of Hippocrates, and then the whole class, alumni, Board of Trustees, and several visitors were invited to the Hotel Marlborough, where was spread one of the most sumptuous banquets ever enjoyed. The table was arranged to seat sixty, and was beautifully decorated with flowers and candelabra. Dean H. D. Gill sat at the head of the table, and at his right Prof. J. R. Huddleston, who discharged the duties of toast-master in a most felicitous manner, adding much to the pleasure of the occasion. Around the head of the table were seated members of the Board of Trustees, Faculty, and President W. Horace Hoskins of the United States Veterinary Medical Association.

The response to the various toasts, as well as the class oration by Dr. C. R. Scattergood, of the graduating class, elicited much interest, and were of a character tending to enlighten all present as well as to convey more forcibly to the students a keener appreciation of the great responsibilities resting upon them. The class orator gave many interesting statistics, which were strong points that the future of the veterinarian was never brighter and that the scope of his work was just beginning to be appreciated and realized. The vein of humor pervading the introduction by the toast-master of those who responded to the various toasts was not the least of a very large part of the enjoyment of the occasion, and was in keeping with the suggestive and artistic arrangement of the program and menu card so tastefully prepared for the occasion, and which will ever remain in the hands of the possessors as a pleasant memento of the occasion. The absence of Prof. Huidekoper, from whose sick-bed a bulletin of health was received and read, exhibiting so keenly the sanguine, jovial character of the man, made more regretful the many expressions of sympathy and sorrow at his enforced absence. We append a list of the graduates with their addresses:

Louis Abel, Brooklyn, N. Y.; Joseph Cohen, New York; John Hambleton Dedrich, Schenectady, N. Y.; George Clark De Witt, Oak Hill, N. Y.; James Thomas Glennon, Newark, N. J.; William Patrick Hanifen, New York; George Ferdinand Harpel, Jersey City, N. J.; Milton Daniel Harper, Philadelphia, Pa.; John Francis Harrison, Stanford, Conn.; George Edgar Harder, Pittsfield, Mass.; J. Homer Huff, Paterson, N. J.; Augustus F. Johnson, New York; Samuel Henry Johnson, Philadelphia, Pa.; Eckford S. E. Littlefield, Brooklyn, N. Y.; James Francis Laden, New Haven, Conn.; James Brown McNeil, Albany, N. Y.; Charles Emerson May, Avon, Mass.; Daniel Girard O'Connell, Brooklyn, N. Y.; Nathan Peyser, New York; Thomas Michael Quinn, Astoria, L. I.; William Riley Rhinehart, Inwood, L. I.; Robert Guernsey Rice, Rome, Pa.; Joseph Schnurmacher, New York; Charles R. Scattergood, Brooklyn, N. Y.; Major Schofield, Brooklyn, N. Y.; Charles R. Utz, Freeport, L. I.; John Tjaden, New York; Max Wendell, Middle Village, L. I.; Walter H. Yingst, Harrisburg, Pa.

UNITED STATES COLLEGE OF VETERINARY SURGEONS.

THE closing exercises were held Thursday, April 16th, in the college lecture-hall, 222 C. Street, N. W., Washington, D. C. The diplomas were presented by Prof. C. B. Robinson to the following: Harry W. Reed, Red Bank, N. J.; and Andrew C. Seacord, Stamford, N. Y.

Prof. Robinson addressed the graduates, giving them much good advice, and Prof. S. D. Lamb also delivered an instructive address, carrying the students from their matriculation to graduation, and pointing out the rapid advances made in veterinary science in the past few years. He mentioned the important positions which the veterinarians were called to fill, and their duties as sanitary officers for the protection of the public, showing the close relation existing between animals and man, and closed by thanking the students for their kind attention during the session and wishing them god-speed in the humane work which they have undertaken.

The trustees announced that the college course would hereafter consist of three sessions of six months each, and thanked the gentlemen who had contributed to the support of the college in the past. During the session the faculty has been strengthened by the addition of Dr. J. P. Turner, U. S. A., and Dr. Walter W. Alleger, of Howard University.

AMONG THE COLLEGES.

THE board of regents governing the educational institutions of New York State, acting under State charters, make curious provisions regulating the election of trustees of these institutions. Colleges calling for alumni trustees are asked to act through their alumni bodies and elect from their number those whom they think best fitted for these positions and who have the best interests of their alma mater at heart, and then the names of those elected are subject to acceptance or rejection by the board of trustees elect at their will and pleasure. At the same time they usurp the right to delegate one of the faculty to present a ticket of selected men and instruct the graduating class who are about to become members of the alumni association to vote for these selected candidates, which savors so strongly of a farce that it needs an explanation and light from the board of regents.

The announcement is out for the Kansas City Veterinary College for the obligatory three sessions of six months each, commencing with the term in October next.

The United States Veterinary College of Washington, D. C., again returns to the rôle of three-year colleges with the session of '96 and '97, commencing in October next.

We understand from reliable sources that the National Veterinary College of Washington, D. C., announced in connection with the closing exercises, that the three-term curriculum would be adopted with the opening session of 1896-97.

With the close of the present session of the Veterinary Department of the Detroit College, Professors S. Brenton and McEachran sever their connec-

tion therewith. The reasons assigned are differences of views in regard to the future management of the school and the lack of prospect of the Department to extend the curriculum to one of three years of six months each.

The reunion of the alumni of the American Veterinary College, on commencement day, March 25, 1896, brought together a larger representation of the various classes than for several years. Among the older graduates whose presence was noted were Dougherty, '76, Howard, '82, Lowe, '88, Holden, '90, Hoskins, '81, Coates, '77, Neher, '87, Dougherty, '81, Allen, '89, Hanson, '89, and many of those of the more recent classes, together with some twenty-four of the graduating class of 1896.

The meeting proved a very pleasant and enjoyable one, and the selection of Dr. L. H. Howard, of Boston, class of '82, as President, and Dr. John B. Hopper, '92, of Garfield, N. J., as Vice-President, were well-earned honors. The selection of Dr. Otto Faust, class of '88, as Secretary, places this important office in the hands of one fully capable to discharge its arduous duties, and the members can rest assured they will be well done, Dr. Faust, the son of Dr. John Faust, of Poughkeepsie, N. Y., comes from the strongest Association stock, and the example of his father, as an earnest, steadfast Association member and honorable professional associate, will no doubt bear rich fruit through the son in building up and strengthening of the latter's alma mater. The retention of Dr. F. R. Hanson, class of '95, as Treasurer, assures the same fidelity that the Association has enjoyed in the past.

The election of alumni trustees was interesting and spirited, and for the first time selections from outside of the State of New York were conceded to be legal, and for the first time the alumni were informed that their selections and election to these posts of honor and great responsibility were subject to the approval or rejection of the regular board of trustees. For this reason there was submitted by one of the adjunct-faculty three names which the board of trustees desired elected, but, as at least two of these were strangers to the alumni meetings, in deference to the feelings and deep interest of the children in their college parent, other names were placed in nomination, which resulted in the election of but one of the names submitted. Drs. Wm. H. Lowe, Chas. Burden, and L. H. Howard are the three selected, and they are subject to rejection or approval by the board, which may end in the alumni being left without a representative.

Interesting reports were read from several State secretaries, and one of especial interest and pleasure from Dr. Wm. H. Wray, class of '78, of London, Eng., an inspector at that port, under the Bureau of Animal Industry.

Revision of the by-laws in many directions was considered, and other changes suggested left over for another year to complete. The report of the committee for procuring alumni prize was received and approved, and the committee in charge of the banquet reported the completion of their work and announced a number of invited guests. After many pleasant renewals of college experiences and the recalling of pleasant memories within alma mater's walls, and the sad duty of adopting suitable resolutions of regret at the deaths of Drs. R. A. McLean, class of 1879, John Duane, class of 1881, P. F. Kiernan, '87, W. E. Smith, class of 1891, the meeting adjourned to reconvene at Clark's on West Twenty-second Street, at 10.30 P.M., and conclude around the banquet table the festivities of the occasion.

PERSONAL.

Dr. T. E. White, of Sedalia, Mo., has succeeded Dr. T. J. Turner, as State Veterinarian of Missouri. Dr. Turner's term of office expired in January.

Dr. R. C. Moore, of Holton, Kan., has taken the large practice which Dr. J. H. Wattles, of Kansas City, has been obliged to relinquish on account of failing health.

Dr. J. H. Wattles, Secretary of Kansas City Veterinary College and Professor of Anatomy, has resigned both positions on account of ill-health, and will go to southern Texas or Mexico, in the hope of finding relief and recovery in changed climatic conditions.

Veterinarian Charles A. Dohan is master of the Lima Hunt hounds.

Dr. W. B. E. Miller has been a very great sufferer from a prolonged and aggravated attack of rheumatism.

Dr. Geo. B. Rayner, of Philadelphia, is just recovering from a serious accident, caused by falling from a trolley car.

Dr. Leonard Pearson is nursing a very sore hand, the result of a bite from one of his canine patients, the wound having taken on an erysipelatous condition.

Dr. Wm. H. Lowe, of Paterson, N. J., was very active in looking after legislation objectionable to veterinarians in New Jersey.

Veterinarian Jos. M. Good, of Chattanooga, Tenn., is at present pursuing a course of study in human medicine at one of the Southern medical colleges.

Dr. John P. O'Leary, of Boston, Mass., graduate of the Veterinary Department of Harvard University, having passed the civil-service examination and received an appointment of Inspector under the Bureau of Animal Industry, has been assigned to Buffalo for duty.

At a special civil-service examination held in Kansas City, there were six applicants for meat-inspector, about forty for livestock-examiner, and ten for tagger, under the Bureau of Animal Industry.

Dr. B. F. Kaupp, of Nevada, Mo., and Dr. F. W. Hopkins, of

Fort Worth, Texas, were recently appointed meat-inspectors and assigned to Kansas City.

Dr. John Airth, of Sioux City, has been discharged from the meat-inspection service for cause.

Dr. Jas. A. Waugh has associated himself with Dr. E. I. Carter, of Pittsburg, and the infirmity maintained for a number of years by the latter will now be managed jointly by the new firm, as well as a union of their individual practices.

President Ridge, of the Pennsylvania State Veterinary Medical Association, has got right into harness. All his appointments of committees, county secretaries, delegates to sister associations for the year, besides to certain members the keeping of clinical notes of designated cases and remedies have been announced.

Veterinarian R. W. Hewitt, of Bridgeton, N. J., has been called to a place on the board of health of that city.

The Philadelphia Horse-Show will be held at the usual place on May 26th to 30th, inclusive. Veterinarians Pearson, Zuill, and Harger will officiate as Inspectors.

The Veterinary Department of the South Carolina Experiment Station, associated with the Clemson Agricultural College and under the direction of Dr. W. E. A. Wyman, covers in the college course instruction over a period of three years, the main stress being upon practical work. The board of trustees are about to erect an infirmity and purchase instruments, drugs, models, etc. Bulletins of a practical nature are issued from the experiment station and investigations conducted of outbreaks of contagious and infectious diseases among domesticated animals.

Veterinarian Hintman addressed the Manitoba Dairy Association on the use of tuberculin and the freedom from danger in its use as a diagnostic agent. Similar experiences were recorded by Drs. Rutherford and Thompson.

Dr. A. W. Clement, of Baltimore, Md., has recently been appointed State Veterinarian. This is a very creditable appointment, and we are sure will result in great good to the State. A graduate of Montreal Veterinary College, and for many years associated with the work of the Bureau of Animal Industry and in original work of investigation, the profession-at-large will expect much from him in his new sphere of work, in addition to the direct results given to his Commonwealth.

Dr. W. B. E. Miller, of Camden, N. J., a former alumni trustee of the American Veterinary College, has been elected a regular member of the board.

The alumni association of the American Veterinary College have selected as their representatives on the college board of trustees, subject to approval or rejection by the existing board, Drs. Herbert M. Lowe, of Paterson, N. J.; Chas. Burden, of New York City; and L. H. Howard, of Boston, Mass.

Dr. Alex. Glass, of Philadelphia, holds the arduous position of secretary to the Philadelphia Kennel-show.

The National Veterinary College had a class of sixteen students the past year. Of this number, eleven passed the final examination successfully and received the diploma of the college.

Pennsylvania's delegates at the annual meeting of the Veterinary Medical Association of New Jersey, Messrs. Ridge, Felton, and Lusson, were all present and thoroughly enjoyed the occasion. Their reception and the hospitality shown them was in keeping with the fame of that organization in this direction, and was well appreciated and will long be remembered. We trust that our sister association will be sure and delegate some of her members to visit the meetings in the Keystone State.

Dr. Hinman the newly appointed meat-inspector for Winnipeg, Manitoba, already realizes the difficulties surrounding his work, with every butcher having a private slaughter-house, and he suggests a central abattoir for his city, which will soon be the adopted plan of every large city that appreciates the value of meat-inspection properly executed.

Dr. Nelson P. Hinkley, of Buffalo, N. Y., has again been on the sick-list, and is now just able to be at his post of duty for a few hours daily. The JOURNAL trusts that his promised convalescence may be complete and speedy.

State Veterinarian Pearson, of Pennsylvania, finds his new duties absorbing most all of his time, and the work already accomplished in stamping out tuberculosis from our herds will result in great good to the communities where it has been accomplished, and from an educational point of view of value beyond one's power to estimate.

Dr. F. A. Nief, of California, has entered the national meat-inspection service, and is located at San Francisco.

Dr. W. E. B. Miller, of Camden, N. J., has been elected meat-inspector for the ensuing year, succeeding Dr. E. H. Landes, who formerly held the position.

Prof. R. S. Huidekoper has sufficiently recovered from his serious illness to contemplate a visit to Boston, Mass., where we hope his convalescence will be more rapidly attained.

Out of some nine applications filed for the position of consulting meat-inspector to the Department of Public Safety for Philadelphia, but four put in appearance before the Board at the appointed time.

WHY WE PROGRESS.

Professors Atwater, Ross, and Wood, of Middletown, Conn., are making an experimental investigation of the nutritive value of food, under the direction of our national government. A student is confined in an air-tight room ten feet square, into which fresh air is pumped; the food is weighed before it is given, and his temperature and physical condition noted at frequent intervals. Those foods making bone, muscle, and blood best are under study.

A medical director, a place in the President's cabinet, and a national board of health are all to be realized in the near future, and why not?

When all our States have veterinary examining boards, working under similar laws and with equally high standards, then will have arrived the time for a national board, whose chief line of work should be to maintain among the several States a common minimum standard.

The increased number of cats in Pittsburg incidental to the several cat-shows over the country has become so "noticeable" as to attract the attention of the public press.

Richard Ringer, of Friend, Neb., on learning of the diagnosis of hydrophobia following the bite of a dog, seized a razor and killed himself. This shows how strong a part the mind plays in this disease, and its probable development.

One of the rules of the coming horse-show at Philadelphia reads as follows: Three veterinary surgeons will be engaged by the Association to examine all horses shown, and no prizes shall be awarded to an unsound horse in any of the saddle or harness classes, or to any horse in the breeding classes in which there exists an hereditary unsoundness; but no horse shall be disqualified under this rule unless two of the veterinary surgeons join in a written opinion, addressed to the executive committee, disqualifying it.

Dr. Samuel G. Dixon, of the Black Rock farm, near Philadelphia, is breeding several Percheron mares to hackney stallions, a cross he contends will produce a fine horse for heavy harness purposes.

Aseptolin, the lymph-product of Dr. Edson, will be given a trial covering a period of six weeks in bovine tuberculosis at Pittsburg, under the direction of veterinarian Robert Jennings, Jr. Six valuable cows will be made subjects for its trial.

The incorporated horse-shows of London will take an advance step in their efforts to better sustain the implied objects of all such organizations by having all the animals looked over in their stalls and quarters, and those not considered in the lead for prizes stood aside; those selected as close competitors for the prizes will then be subjected to a rigid veterinary examination and finally passed upon by the judges as to their merits for the various prizes offered. This should be done in every show, and not until then will these organizations fill their proper and full sphere of usefulness.

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| To remove the foul odor of water-closets, garbage, dumps, etc., sprinkle with a solution of 2-4 teaspoonfuls of Merck's Creolin-Pearson in abt. a quart of water. | | |
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THE JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES.

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No. 6.

ON INTESTINAL PARASITISM IN THE DOG, AND ITS TREATMENT.

BY CECIL FRENCH, D.V.S. (MCGILL AND MUNICH),
THE WASHINGTON (D. C.) CANINE INFIRMARY.

In former times, before the complicated life-history of intestinal parasites had become established through experimental research on men and animals, the condition known as helminthiasis was understood to indicate a certain *diathesis verminosa*,¹ the essential characteristic of which was malassimilation of nutriment, resulting in the accumulation of material which contributed to the production of worms—that their presence could be accounted for by spontaneous generation. It was held by some² that this worm-diathesis could exist without the actual presence of the parasites. Others even asserted that they exerted a beneficial effect by increasing secretions and stimulating peristalsis. Not only were such false ideas conceived, but it was the belief of the medical fraternity that every ailment had its origin in the existence of some real or imaginary verminous parasite, each with a characteristic habitat. Traces of this erroneous credulity exist to this day among the laity, as every practitioner knows and experiences to the cost of certain appendages of his patients. It is now well established that intestinal worms can only occur as the result of ingestion of themselves, their eggs, or their larvæ.

Of all domestic animals that come within the range of our practice none is so notoriously the harbinger of intestinal parasites as the dog, with the exception, perhaps, of the cat. In fact,

¹ Bremser.

² Rilliet, Barthez.

so conveniently does he prove a host, through his methods of seeking and partaking of his daily aliment, that more deaths are ascribed, either directly or indirectly, to this cause alone than to all others put together.

The different species of worms produce various pathological conditions, according to the influence they exert and the part of the alimentary canal they inhabit. Thus the symptoms produced by ascarides differ considerably from those produced by uncinaria. In considering the influence exerted by these parasites on their host several factors must be entertained:

1. They exist and thrive at the expense of their host. The importance of the drain on the host of nutriment depends on the variety, number, and size of the parasites present. It may take place either by absorption of digested matter, as occurs from the presence of tape and the common round-worms; by direct extraction of blood through the attachment of uncinaria to the mucous membrane, and the subsequent secondary hemorrhages resulting from their bites; or, in slight measure, by the devouring of cells of certain parts of the tract which characterizes infection from sporozoa.

2. Their presence, and more particularly their movements, may inhibit and prevent the physiological functions of the intestine, and by irritation of the sympathetic nerve-endings produce reflex nervous phenomena of a most severe character. This latter is the most serious effect.

3. It has not been proven, but from clinical symptoms it would seem highly probable, that, like bacteria, they may produce certain leucomains having a decidedly injurious action, which manifests itself prominently in cutaneous eruptions.

4. Finally, they exert local influence by their bulk, in that they may form impacted masses in the canals in which they live, and may wander into and occlude neighboring passages, such as the bile-ducts and respiratory tract.

The life-history of at least the more common forms with which we have to deal should be made the object of careful study, since on this depends a knowledge of the methods employed for their prevention and eradication.

It may be briefly stated that the ascaris is most dangerous, the tænia most insidious, and the uncinaria or dochmius most difficult of expulsion. So profound is the influence on the nervous system exerted by the first, that an apparently healthy, vigorous puppy may be suddenly stricken down, perhaps with

one or two convulsive movements, and succumb from reflex cardiac inhibition. The second may merely induce in the host slight periods of listlessness, which often fail to be taken as indicative of *tæniasis*. The last may have stimulated the secretion of such an abundance of tenacious mucus that it may envelop and protect them from the action of the remedy. Moreover, the heads of the same being attached at some depth within the wall of the mucosa, the difficulty of reaching them with remedies is further augmented.

In the treatment of intestinal parasitism we aim either to kill or torpify the worm, and then remove it from the intestine by the aid of purgatives. Remedies used for this purpose are designated vermicides or anthelmintics. Or we may drive out the parasite living, when the drugs we use would be more properly called vermifuges.

It is best to begin with the preparatory treatment. This consists in cleaning out the intestines, particularly the lower bowel, so that there may exist no obstruction to the free exit of the worm. For this purpose laxatives may be administered, and their action supplemented by an enema of cold water. All solid food should then be withheld for a day or two. It is customary with some to proceed with a special diet, the object of which is to "sicken the worm." Röhl¹ recommends a preparatory diet of plenty of meat, or a decoction of milk or onions. The feeding of meat at this period is hardly to be counselled. It requires considerable time—sometimes hours—for the completion of gastric digestion in the carnivora, and especially is this the case when meat has been swallowed in large fragments. The presence in the canal of the debris of such fare must of necessity more or less impair the desired effect of any remedy, unless several hours have elapsed prior to its exhibition. Milk is an excellent preparatory food, and may be given unsparingly.

Treatment is best commenced in the morning. The patient should previously be fasted from twelve to twenty-four hours, according to age and physical condition. The older writers enjoin that the anthelmintic prescribed should be followed an hour or so later by purgatives, such as castor oil, etc. Such procedure is usually necessary if the remedies and methods of applying them then in vogue are made use of; but under our

¹ Röhl: *Manuel de pathologie et de thérapeutique des anim. dom.*

modern system of medication, with the improved and concentrated drugs now prepared by the chemists, vermicide and purgative can be combined and administered in small capsular form, with little or no inconvenience to either practitioner or patient. While the so-called gunshot prescriptions are usually regarded as unscientific, there can be no doubt that in the majority of cases of helminthiasis, especially where a positive diagnosis of the worm present is not possible from examination of the excreta, the wisest mode of procedure is to administer remedies that will attack both tape- and round-worm at the same time, for it frequently happens that both classes are present in the canal together.

Many of our clientèle desire to tend their pets themselves during treatment for helminthiasis. They request of us compound or prescription for the same, that they may administer with a minimum of difficulty; they do not care to have to force their pets to swallow an ounce or two of objectionable and often nauseating castor oil or any other fluid substance. With this object in view I have endeavored to secure a combination of drugs with both anthelmintic and purgative properties in such form as will admit of easy administration. The prescription I use for this purpose is as follows:

R.—Oleo-resinæ Aspidii	. . . . .	5 m.
Kamalæ	. . . . .	3 grains.
Santonini	. . . . .	½ grain.
Resinæ Jalapæ	. . . . .	1 grain.
Hydrargyri Chloridi Mite	. . . . .	½ grain.—M.

The first ingredient is rated among our most active tænicides. In addition, it has proved a valuable remedy against dochmius. The second is also a tænicide with drastic purgative properties, and has some effect on dochmius. The third is, *par excellence*, our weapon against round-worm, whilst the two last are active purgatives for the dog, and, inasmuch as the resin of jalap or jalapin is used, requires to be given in but very small dose.

Parke, Davis & Co. prepare this for me and put it up in their excellent soft elastic gelatin capsules, each containing the quantities designated in the prescription, at a cost of \$5.75 per 1000 capsules. For puppies from six to ten weeks old (excepting very small toy-dogs) I prescribe one capsule, to be followed by a second in three or four hours' time, and increase the doses up to four or six capsules according to the age and breed of the dog.

Though the removal of intestinal parasites is a violent procedure, it is usually accomplished without much distress to robust subjects. Nevertheless, with weak, unthrifty, or highly nervous animals, especially during puppyhood, it is sometimes far from being unattended with dangerous or even fatal results. Particularly is this the case with ascarides. There can be little doubt that such effects have frequently been unwittingly ascribed to the systemic action of the drug or drugs used, whereas in reality they have been occasioned solely by the gyrations of the worm attending the act of removal. *Tænia* and *dochmius* exert on their host an effect that may be described as *passive*, and can be considered as seldom capable of inciting sudden danger to life. On the other hand, the effect produced by ascarides is most *active* and often precipitate.

When an ascaris has slowly developed in a certain area of the intestinal canal from its ovoid state to maturity, it no doubt remains in a more or less quiescent condition so long as it is supplied with abundant nutriment and comes in contact with nothing that will affect its equilibrium. In other words, it will adapt itself readily to the favorable environment. It is not unreasonable to suppose that a like adaptation to prevailing conditions will be gradually acquired by the division of the nervous system distributed to the area in question. So long as no profound change takes place in the relationship of the worm to itself the nervous system will continue to be unaffected. If, however, something noxious in the host's diet (and the appetite of a worm-subject is notoriously abnormal) or indisposition on the part of the host to partake of the regular supply intervene, the parasite in its struggle for existence will begin migratory action in search of a retreat or sufficient nutriment, as the case may be. Then will follow the train of nervous phenomena symptomatic of the presence of ascarides. The nervous relationship has been rudely jarred and the intensified movements of the worm exert an impressive reflex action on the higher centres.

Applying this hypothesis to the unfavorable results sometimes following the removal of the parasites we are afforded a reasonable explanation for the nervous phenomena and sudden collapse. It requires but a slight stretch of the imagination to apprehend what a profound effect violent and abnormal gyratory movements of a fugitive round-worm may exert on the nervous system. The cautious practitioner, on receiving an asthenic

patient for anthelmintic treatment, accordingly will not hesitate to advise his client of a possible unfavorable termination to his efforts to effect a cure.

The following are the most approved anthelmintics for dogs, arranged as nearly as possible in their order of general efficacy. The doses mentioned range between the extremes for the smallest puppy to the largest full-grown animal :

For Tænia.

GRANATUM (*U. S. P.*) is official, but its use in crude form is impracticable. Its vermifugal properties depend on its alkaloid, pelletierine, which is a colorless liquid, soluble in twenty parts of water, and readily miscible with alcohol, ether, or chloroform. By the addition of acids, crystalline salts are formed, of which four have been prescribed, viz., the sulphate, hydrobromate, hydrochloride, and tannate. Tanret, in 1878, announced the successful isolation of the alkaloid pelletierine. Its use at first, in the form of the sulphate salt, was not attended with the expected favorable results. This was attributed to the decomposition of the salt by the acid of the stomach. The tannate was then employed with complete success, on account of its small solubility and slow absorption. It is a hygroscopic, tasteless powder as prepared by Merck. Pelletierine is undoubtedly the most efficient and innocuous tænicide for the dog that we possess, but is not much used on account of its expense. I have frequently found it most useful when the stomach has refused to retain other remedies. The doses of pelletierine tannate are, for adults, 5 to 15 grains; puppies, $\frac{1}{2}$ to 5 grains. It should be administered in gelatin-capsular form in conjunction with powdered purgatives.

A preparation of the alkaloid known as Tanret's syrupy solution is sold, each bottle containing what must be considered a small dose for the dog. Another preparation is the *Extractum puniceæ granati fluidum*, adult dose 20 to 30 minims, to be administered in syrup, but its effects are uncertain.

ASPIDIUM (*U. S. P.*), FILIX MAS (*B. P.*), is perhaps the most reliable of all the vermifuges, with the exception of pelletierine. For every-day practice it is to be preferred to all other remedies when given in the form of the oleoresin (*Oleoresina aspidii*, *U. S. P.*). The doses are, for adults, 15 to 40 minims; puppies, 5 to 15 minims. The dose of the (*B. P.*) liquid extract (*Extractum filicis*

liquidum) is the same. It is worthy of note that Fröhner reported the poisoning of a small dog by 30 minims, and a medium-sized one by 5 fluidrachms of the liquid extract. Müller regards the extract the most reliable of all tænicides.

KAMALA (*U. S. P.*; *B. P.*) is a brick-red powder containing an active principle, rottlerin, which is not official. It is a very efficient tænicide with drastic purgative properties. Given in small amount as an adjunct to other tænicides, particularly to the oleoresin of male-fern, it will be found a very valuable remedy. The doses are, adults, 15 to 30 grains; puppies, 3 to 15 grains.

BRAYERA (*U. S. P.*), CUSO (*B. P.*), yields kosin or koussein, to which it owes its tænicidal properties. As prepared by Merck it is a yellowish-brown powder, soluble in alcohol and ether, but sparingly so in water. It is one of the best and safest tænicides, its action being directly toxic to the worm, but it is too expensive for ordinary practice.

The infusion (*Infusum brayeræ* (*U. S. P.*) and fluidextract (*Extractum brayeræ fluidum*) are both too bulky and disagreeable for administration to the dog. Kosin may be given in capsules in doses, adults, 10 to 40 grains; puppies, 10 to 20 grains. The drug usually acts as its own cathartic, but it is better to employ some adjunct for this purpose.

SEMEN ARECÆ, when freshly ground into powder, is a very good remedy for tapeworm, with some effect on ascarides also. When stale it will generally be found inert, consequently it is best always to purchase the nut and grind or grate on an ordinary nutmeg-grater. It is still largely used by British veterinarians, and is a favorite with some on this Continent, but it cannot now be regarded as being either as effectual or easy of administration as the two preceding drugs. Its effects on young puppies are not unattended with danger, on account of its great astringency, but with due regard to subsequent purgation it is a perfectly safe remedy.

Mayhew's method of prescribing one to two grains to every pound weight of the patient is usually followed, but the smaller quantity will generally suffice, provided the powder is freshly ground. It may be conveniently given in gelatin capsules, accompanied or followed by a purgative. Combined with the fluidextract of male-fern it is highly recommended by the Edinburgh authorities.

TEREBINTHINA (*U. S. P.*) is a powerful remedy against tape-

worm, but it is regarded as being somewhat dangerous from its liability to produce strangury and renal inflammation. These effects are said to be less pronounced after large than after small doses; but large doses are more liable to cause gastric and enteric inflammations. It can hardly, therefore, rank with the best remedies. If given, it should be administered in emulsion with white of egg, mucilage, milk, or oil, in doses as follows: adults, 15 to 40 minims; puppies, 3 to 10 minims.

Dr. W. Horace Hoskins informs me that the use of this drug in his hands, where the puppies are under six months of age, has proven very satisfactory, and has never been followed by any gastric or renal trouble. In extremely young dogs he rarely gives more than two minims in milk, carrying it up to ten minims, and repeating for two or three days on an empty stomach in the morning, allowing no food for an hour or two hours after its administration.

For Ascarides.

SANTONINUM (*U. S. P.* and *B. P.*) is the most approved remedy against round-worm. Discovered in 1830 by Kahler, a chemist at Düsseldorf, its therapeutic properties were soon studied by Trommsdorff and Liebig. Merk, of Darmstadt, and Cailloud, of Annecy, first made known its vermifugal properties on human beings. Later, Coppola introduced santoninossima as an insoluble substitute, but there seem to be no records of its trial on dogs.

The administration of santonin to young dogs without some protective vehicle in other than relatively small doses, is not unattended with danger.

Fröhner¹ reported profound symptoms of poisoning in a puppy aged five weeks, weighing six and a half pounds. A dose of one grain was given, which had an immediate anthelmintic action. At the same time the animal manifested restlessness, ran around the room, and whined the whole night. Paralysis of the hind extremities appeared. Psychical disturbance was pronounced. The urine developed a striking reddish-yellow color. Temperature, 102.6°; pulse, 152; respirations, 62. An antidote of coffee (5jss to 3jss) was administered, and recovery ensued.

A dog,² ten years old, weighing fifteen pounds, received gradually increasing doses of santonin, commencing with 4 grains, until 5jss had been reached, at intervals of two to four days.

¹ Monatshefte für Thierheilkunde, 1893, iv. pp. 338-309.

² Ibid., pp. 535-563.

Not until over 75 grains had been taken did his system respond to the drug, and from then on the reaction appreciably decreased.

Keppel¹ administered 6 grains with $1\frac{1}{2}$ ounces of castor oil to a dog weighing twenty pounds, increasing the dose to 15 grains in four days. The urine became of a deep-red color as the dose advanced, but there were no poisonous effects.

Another dog, weighing thirteen pounds, received $7\frac{1}{2}$ grains without ill effect. In three-quarters of an hour $15\frac{1}{2}$ grains were given, when epileptiform convulsions developed. The same quantity again produced the same result. Recovery followed in a few hours. V. Hasselt and Rienderhoff² observed the following effects from doses mentioned: 6 grains, trembling of hind extremities; 9 to 12 grains, stiffness and cramps in extremities, head, and trunk, trismus, dilatation of pupils, and unconsciousness. They regard doses of from 60 to 90 grains as fatal, death intervening after repeated attacks of cramp and profuse salivation.

The following conclusions were drawn by Fröhner with regard to the effect of the drug: Nursing puppies per two and a half pounds body-weight are nearly one hundred times, and half-grown animals two to four times, more susceptible than adults. Thus, an aged animal taking 26 grains per two and a half pounds body-weight exhibited almost complete immunity, whilst in the first-mentioned case a puppy nearly succumbed to slightly more than $\frac{1}{3}$ grain per two and a half pounds body-weight. A three-weeks-old puppy,³ weighing four and a half pounds, was unaffected by $4\frac{1}{2}$ grains administered in glucose; 9 grains did not render the animal unconscious, but produced slight contraction and uneasiness. A medium-sized dog got $7\frac{1}{2}$ grains in sugar. In three-quarters of an hour the urine became of an onion-red color, after three hours very purple, and in twenty-one hours assumed its normal color again. The same animal was given santalin in castor oil without influencing the elimination of urine.

From the foregoing cases it would seem that when the drug is suspended in some oleaginous or other suitable vehicle (oil, cream, sugar of milk), it becomes less liable to absorption on

¹ From extract from Bericht des Vet. W. in Sachsen in American Vet. Review, May, 1894, pp. 116-117.

² Monatshefte für Thierheilkunde, 1893, iv., pp. 308-309.

³ From extract from Bericht des Vet. W. in Sachsen in American Vet. Review, May, 1894, pp. 116-117.

account of its being but imperfectly dissolved. Santonin is not soluble in water or weak acids, like the gastric juice. It is probable that when given alone it passes through the stomach unchanged until it meets the alkaline juices of the small intestine, in which it is freely soluble. If administered already dissolved in an alkaline menstruum, it is liable to be absorbed in the stomach before reaching the parasite. Accordingly, we are led to the conclusion that it is considerably safer to administer santonin suspended in either of the substances mentioned than by itself. But for reasons already stated it is frequently impracticable to prescribe oleaginous compounds. Pill or capsule, with sugar of milk as a vehicle, and containing at the same time a powdered purgative, meet these requirements, but as such the dose should be the smallest. But, as already stated, small doses of santonin occasionally exert but little more than vermifugal action. If the worms be present in large numbers such doses may be sufficient to incite sudden and migratory action on the part of the parasites, which, though complete as far as the desired remedial effect of the drug is concerned, may profoundly affect the nervous system in debilitated or impressionable subjects. On the other hand, doses sufficient to produce a pronounced vermifugal effect are attended with considerable risk to young subjects.

Seeing that the nervous disturbances in question are not dangerously frequent the balance of safety lies in favor of small amounts, and these should always be administered when possible suspended in either of the substances mentioned above. Theoretically, oil should be the best vehicle, because it tends to lubricate and render less susceptible to irritation the surface over which the struggling worm travels.

Not more than the doses mentioned below should be given, but they may be repeated at intervals of a few hours. The crystals should be used and not the powdered santonin—adults, 1 to 4 grains; puppies, $\frac{1}{6}$ to $\frac{1}{2}$ grain. As a purgative adjunct when prescribed in capsule, calomel is regarded as particularly useful, the outpouring of bile caused by the mercurial being abhorrent to the worm.

Fröhner¹ regards doses of $\frac{1}{3}$ grain per two and a half pounds body-weight liable to induce severe poisoning in young dogs, and suggests as a safe dose for puppies $\frac{1}{6}$ to $\frac{1}{3}$ grain, for old

¹ Monatshefte für Thierheilkunde, 1893, iv. pp. 308, 309.

dogs $\frac{3}{4}$ to 3 grains. Poisonous but not necessarily fatal doses are $1\frac{1}{4}$ to $2\frac{1}{2}$ drachms. However, grown animals in advanced years so accustom themselves to the drug that it is difficult to poison them with it. Therapeutic doses can in general be much larger for grown animals than for young ones. Doses which may be regarded as large but not always dangerous for grown animals are 7 to 30 grains. With these doses the animals in Fröhner's experiments showed only slight if any reaction. The principal symptoms of poisoning from santonin in the dog are epileptiform convulsions, psychical aberration, lethargy, vertigo, paralysis, disturbance of vision, myosis, yellow-red coloration of urine, salivation, nasal discharges, slight colicky pains, diarrhoea, anorexia. The red coloration of urine can be seen within an hour after administration of the drug.

SPIGELIA (*U. S. P.*) is a good remedy, but not nearly as efficient as the preceding. In the form of the fluidextract (*Extractum spigeliæ fluidum* (*U. S. P.*), or, better still, the unofficial fluidextract of spigelia and senna (*Extractum spigeliæ et sennæ fluidum*). When administered without the senna it should be followed by a purge to sweep out the narcotized worm. For this purpose sulphate of magnesium is best on account of its rapidity of action. The doses of both extracts are the same: adults, $\frac{1}{2}$ to 2 fluidrachms; puppies, 10 to 30 minims.

CHENOPODIUM (*U. S. P.*). The powdered seeds of this fruit, made into an electuary with syrup or honey, or enclosed in capsule, may be given in the following doses: adults, $\frac{1}{2}$ to 1 drachm; puppies, 10 to 30 grains. Or it may be given in the form of the oil (*Oleum chenopodii*, *U. S. P.*). Dose, adults, 20 to 40 minims; puppies, 5 to 10 minims. To a puppy the latter should be given in emulsion with gum-acacia, but adults will bear it in capsule.

For Uncinaria.

For these tenacious parasites I have found the oleoresin of male-fern combined with kamala very effectual. The former has been used with excellent results in the form of the ethereal extract by Perroncito. The latter is recommended by Mégnin,¹ in conjunction with calomel and the oxide of arsenic. The doses should be somewhat smaller than those indicated for tænia, and repeatedly administered. Thymol has been successfully prescribed and regarded as a specific for the closely related

¹ *Traité des Maladies Parasitaires des Anim. Domest.* Neumann, p. 453.

anchylostomum duodenale of the human family by certain Italian physicians, but in my hands it has failed to have any effect on the species infecting the dog, principally on account of its tendency to produce emesis, which no doubt takes place before it reaches the bowel.

Whatever remedy is used it is important that treatment be continued till all indications of the presence of these parasites have disappeared. Resort should then be had to tonics and hæmatinics with cod-liver oil.

Digestion in the stomach must be more or less impeded because the glands will secrete less vigorously during the anemic condition of the blood. Absorption of digested material from the intestine must also be considerably interfered with on account of the catarrh and inflammatory thickening present. It is important, therefore, that as much nourishment be extracted from the food and absorbed within the stomach as possible. To this end digestant doses of pepsin and acid with the food are beneficial, but should not be kept up long enough to interfere with the natural secretions.

TREATMENT OF ACTINOMYCOSIS.¹

BY DR. V. SCHAEFER,
TEKAMAH, NEB.

As we have actinomycosis in two forms, that is, one form affecting the glandular and soft structures about the head, neck, and sometimes the sternum and other parts of the body, and the other, which affects the bones and teeth of the upper and lower jaw, I will describe my treatment separately.

In the glandular form, or that in which the disease is manifest by soft tumors, I make an incision into the tumor large enough to admit one or two fingers, seldom larger; and aim to cut the centre as near as possible; evacuate the pus, if there be any, with a syringe; explore the cavity in the centre of the tumor with the finger, and break off all the granulation on the inside, as all these tumors are formed in the centre.

When I have found any actinomycotic cavity lined or filled with these granulations, as said before, I break them down with

¹ Read before the Nebraska State Veterinary Association.

my finger or a blunt instrument and use a six-inch curved scissors to remove everything which is loose, thus enlarging the cavity as much as possible. In a little oakum wrap from one drachm to one ounce of chloride of zinc, according to the size of the tumor or cavity. Insert this into each cavity as far up as possible. In very large cavities it is best to divide the chloride of zinc into several portions in order that it may come in contact with all parts of the cavity. Fill the remaining cavity with oakum and stitch it to retain the packing. Treat every tumor or abscess that may be found on the animal in like manner.

With a hypodermic syringe inject from one to two ounces of tincture of iodine, diluted with double the amount of alcohol, around and into the tumor and in the maxillary space. The quantity to be injected is to be governed by the size of the animal, using the most in large animals; where the tumors are large and deep-seated push the needle well down to the base so as to get the iodine deep into the tissue. In from ten to fourteen days the tumor will slough out and leave a healthy granulating sore, which will heal in the course of four or five weeks from the time of operation, depending somewhat on the stage of suppuration.

We also meet with some cases where there seems to be no localization of the disease, only appearing as a large soft swelling of all the lower parts of the jaw and throat, and sometimes an emaciated condition of the animal. In still other cases the tongue is so swollen that it protrudes, causing inability to eat or drink. In these cases cast the animal, and with a hypodermic syringe inject from one to two ounces of tincture of iodine diluted with alcohol into all parts of the swelling, and particularly in the maxillary space, which is the favorite seat for my injections.

Let the disease exist where it may, wherever there is much swelling I push my needle, which is a strong and rather short one, full length into the swelling. I have only treated a few of the last-named cases, but the treatment was satisfactory, the animal recovering in each case. In some cases a second operation was necessary where new abscesses formed. I treated two especially bad cases where several operations were necessary and where I tested the iodine in the treatment of actinomycosis, and since adopted the present method. In the spring of 1890 I removed a tumor about the size of a man's head from

the brisket of a steer; another as large as a double fist from the maxillary space just below and a little to the anterior part of the larynx; and a smaller one from the anterior part of the head below the ear. I cut out the tumors until I thought there were no parts of them left, having used only a small amount of chloride of zinc and no iodine, thinking I had nothing but healthy wounds to treat. In a few days I operated on a similar case in a steer, but without the tumor at the sternum. In about six weeks I was again called to operate on the first steer. To my surprise I found that all the tumors had returned and grown as large as when first examined and the animal not in good condition, having lost flesh. I decided not to use a knife this time, as there was no abscess in the tumors, but instead a fungus or hyperplastic tissue. I wanted to test the iodine injection alone, so I cast the animal and injected the iodine as described before. Soon after the owner reported the animal was doing better and was gaining in flesh. In five or six weeks I cast him again and made injections. This time I discovered a large abscess on the side of the neck. I opened it, washed it thoroughly with water, and injected iodine in and around the abscess. In catching the steer we drove him on a stock scale and thus had an opportunity to weigh him. This the owner did each time. From the first to the second iodine injection the animal gained one hundred pounds, and the tumors were not more than half as large as at the first injection, and were quite healthy-looking. In six weeks I made a third injection, and this time found another abscess on the opposite side of the neck. By this time the animal had gained one hundred and thirty pounds. The tumors were almost entirely gone; the animal was fat, and his hair glossy-looking, and in five or six weeks the animal was sold in the Omaha market without any objections. The second steer proved the same as the first; the growths returning as large as before, but looking worse. I made two iodine injections, and a complete recovery was the result.

These were the last cases in which I removed tumors or enlargements, but since have operated on more than two hundred and fifty animals, and nearly everyone recovered. The operation just described is a simple one, and more than 95 per cent. will recover.

The form affecting the lower jaws is not so easily nor so successfully treated as that affecting the soft structures. It depends.

greatly upon what portion of the jaw is affected and at what stage treatment is attempted. We find cases at such advanced stages in which the jaw is increased many times its normal size, the bone softened, and the whole structure of the jaw a perforated mass of rarefied bone. In such cases it is useless to attempt treatment. Treatment of the upper jaw is not so successful as the lower one, which I am about to describe.

I operate when there is no external opening, and in most all cases where there is an opening, but where the jaw is not increased more than three or four times above normal, or in all cases where the enlargement in the jaw is circumscribed, and examination proves that there is enough comparatively sound bone to prevent the jaw from breaking after removal of the diseased portion; the case is more hopeful if the anterior portion of the ramus is affected than the posterior, especially if the disease extends back to the angles.

In operating on a case before suppuration has set in, and where there is only an enlargement of the jaw-bone without an external opening, extract the teeth in the enlarged part, and sound one tooth on each side, anterior and posterior, to make certain that all the diseased part will be included in the operation. When the greater part or the whole jaw is enlarged extract all the teeth. After extracting the teeth make an external opening with the trephine or bone-gouge through the inferior surfaces as if to punch out the teeth. Enlarge this opening anteriorly and posteriorly as desired in order to remove all the fangs or roots of the teeth that may exist. Remove all soft or diseased material between the inner and outer plates of the jaw. Make an oakum plug to fit the full length of the cavity in the jaw. Have an assistant hold it in place by twine looplet around it and near its ends, and pass the strings out through the hole in the jaw. Draw the plug down into the jaw, just a little to hold it in place and tight enough to prevent anything escaping into the mouth. Fill the remaining space with chloride of zinc and oakum, aiming to pack it completely from the outer opening. Lay a large pledget of oakum over the external opening and tie the strings which hold the plug on the inside over the pledget on the outside; the strings thus holding both inner and outer plugs in position. Inject iodine along the jaw and in the maxillary space, and let the animal up. The first few days it will not eat nor drink much, but it will soon begin to improve, and the jaw will get well in from three to six weeks, depending greatly at

what stage the operation was performed. When the jaw has already an external opening with a running sore, with or without a fungus attached to its inferior surface, treat it in the same way, using the original opening, and in most cases where the disease is located in the jaw our attention is generally called in the last-named stage.

If there is enough solid bone in the jaw to allow removal of most of the diseased bone without danger of breaking it off, the animal usually recovers. Both lower and upper jaws are treated in the same manner, modified according to circumstances. In a number of very bad cases two or three operations were performed, there being so much of the bone affected as not to allow the removal of all the diseased portion at one time.

After removing the most diseased parts and treating as above stated, the jaw will become less in size and firmer, and the disease more circumscribed. In a few weeks another operation can be performed more satisfactorily, and recovery has nearly always followed. Some may ask, Why not treat with iodide of potassium, as this is said to give good results? But this treatment does not suit most of the Western feeders or owners of young cattle, requiring more work, attended to regularly, quarantined, and in many cases the animals are wild and almost unmanageable. I have advised feeders to try the iodide of potassium treatment, but was told they would rather pay for the operation than have the trouble themselves. I find it is about the only operation I perform which is appreciated by the owner and in which he feels repaid for his expense.

It gives me an extended practice and adds considerably to my income at the end of the year.

HEREDITARY TRANSMISSION OF TUBERCULOSIS.

BY S. H. WARD, V.S.,
SELKIRK, MANITOBA.

I TRUST I may be pardoned for again bringing this subject before your notice, but owing to a discussion which took place at our last annual meeting, at which time I maintained the transmission of this disease, I was met by contra-arguments. And, *secundum naturam*, I shall endeavor, by a few facts, to maintain my arguments of last year.

Prof. Bang was quoted as saying, "provided the progeny of tuberculous animals were fed on sterilized milk, there was little likelihood of their contracting the disease." To advance my views I cited as examples the Indians living in my district who are sufferers to a great extent from this scourge. It was suggested that as there was such a large per cent. among them, it was due to animals which had died on the prairie, the meat of which had been partaken of, and thus the disease disseminated among them. Another gentleman maintained it was more of a syphilitic nature.

On the face of these arguments I have taken pains to ascertain and trace the family history of some affected, and am in a position to prove that it has not been acquired, and I have the words of the medical gentlemen connected with the Indian Department, who state positively they have failed to find a case of syphilis among these Indians.

The older writers show no hesitation in assuming a direct transmission from parent to child, formed, I would judge, by statistics. After Koch's discovery of the bacillus the transmission was denied by the followers of the parasitic theory, but now there is a tendency by some writers to fall in again with the old views, and various hypotheses have been advanced to explain this.

Waldeyer and Martin have shown that the spaces between the lobuli of the human placenta, and of course covered by epithelium, contain foetal blood, and that the foetal tufts are bathed in maternal blood; proof is positive that the bacillus is present in the greater circulation as seen in the localization of nodules in the liver, kidneys and testicles, therefore there can be no reason why they should not pass out of the maternal placenta; positive results have been obtained by the inoculation of animals with the placenta of phthisical patients, and, further, the disease has been produced by inoculating animals with pieces of organs from apparently healthy foetuses derived from tubercular mothers.

Let us still continue and ask why may not the bacillus pass a larval existence in the glands and medullary canals, and then as the infant matures and the vitality of the tissues diminish from traumatism or inflammation the germ develop.

I might be asked the question, Why does it not show as syphilis does? I would say due, perhaps, to a greater mobility of the syphilitic germ.

Again, it might be said there is no proof microscopically or by other means that there is a larval existence in the foetus. Metschnikoff implies the existence of a very tough resisting membrane, as the bacillus resists the color in staining.

It can never be said of any person that he has no predisposition whatever, that he is not proof against the occurrence of tubercle, for it has appeared time and again in those seemingly immune from it; or, again, supposing the subject of tubercle to be born of apparently healthy parents, we do not know that the diathesis was not lurking latently in them, wanting only a sufficient amount of existing cause for its outbreak.

I do not seek to infer by this paper that tubercle is acquired only as a legacy from parents, but I do mean to say that it is hereditary, yet may be acquired.

No race is immune. The Indians of this continent are very prone to the disease. Matthews, whose experience is very large among the native race, states that the disease is on the increase among them. He quotes the ratio from the United States Census, 1880, as white 166, negroes 186, Indians 286. The death-rate in the old reservation, as in New York State, is three times as great as in Dakota. In the Blood reserve of the N. W. T., Surgeon Kennedy (N. W. M. P.) has given the figures for six years. In a population of 2000 there were 127 deaths, or 237 of the total rate. This does not include death from "diseases of infancy." This enormous death-rate, it is to be remembered, occurs in a tribe occupying one of the finest climates of the world, along the foot of the Rocky Mountains, a region in which consumption is extremely rare among the white population, and in which cases of tuberculosis from the eastern provinces do remarkably well.

Dr. Osler also points out that the negro race is very susceptible to tuberculosis, more particularly the glandular and osseous form.

A double V-shaped flap in amputation of the tail facilitates the healing process by affording a better method of drainage after the fourth or fifth day by removing the stitches from the lower angle, and when necessary permits of greater facility in cleansing the wound and applying dressing-powder. The points of the angle of both incisions are made directly opposite, one on the superior, the other on the inferior face of the tail.

A PLEA FOR THE INSTITUTION OF A NEW SPECIAL COURSE OF INSTRUCTION IN VETERINARY COLLEGES.

BY SAMUEL GOLDSTEIN, A.B., M.D.,

ATTENDING SURGEON, NEW YORK THROAT AND NOSE HOSPITAL, ETC.

STEADY advancement in scientific work has in recent times characterized the progress made in veterinary medicine and surgery. Pathology, bacteriology, ophthalmology, and other special lines of research have been accorded graded courses in the colleges, and instruction, both didactic and practical, has been instituted and pursued in a consistently thorough manner. With this progressive spirit, research, and the practical application of those principles derived therefrom, has gone further and further in the direction of a thorough accomplishment of the end in view. With these bright prospects for progressive veterinary medicine, to what pinnacle of perfection the coming student may be trained only the future can reveal. However, notwithstanding the zeal already displayed in the aforementioned lines, another special course appeals to us in the strongest of terms, and in the very near future will, I feel assured, assume the proper position its importance demands. As a specialty in veterinary medicine, it is undoubtedly but in its infancy; and, therefore, the time is not yet ripe for the full demonstration of its practical importance.

The diseases which assail the air-passages, directly and indirectly, are many and various; and we can safely state that the lower air-passages have undoubtedly received the benefit of the attention they properly deserve. But, may I ask, what attitude has been assumed in the consideration of the upper air-passages? As far as I have been able to ascertain, the barest mention has been made in the text-books and reports upon veterinary medicine and surgery. I feel fully convinced that it is no idle assertion that many of the diseases which assail the lower air-passages have had their nidus, or are at least to a great extent, dependent upon some local disease of the nose, pharynx, or larynx.

With the evidence of these bare facts, can we at the present day turn aside or overlook so important a respiratory channel as the nose and throat?

Comparative medicine and surgery have produced results at one time undreamed of. To-day physiological effects of drugs, new operative procedures, etc., have been experimented with upon animals, and the results derived therefrom employed for the benefit of mankind. Might not a reversed application of known principles in rhinology and laryngology achieved upon man be employed in the study and application upon quadrupeds, at least upon our domestic animals? Cases of common distemper occurring daily in animals would not be so accepted in human medical circles. The acute rhinitis, as well as the general condition, would receive the attention of the rhinologist.

Why should we not apply similar principles in the treatment of the animal? Epistaxis, to be properly treated, would have its origin carefully sought, and whenever passive, when found due to a local lesion, that particular pathological condition would receive prompt attention, both to treatment of the emergency and in the endeavor to prevent its possible recurrence. If due to the presence of polypi or septal ulceration, should not these local pathological conditions receive appropriate local treatment? Septal deformities, nasal and laryngeal neoplasms, and catarrhal conditions of the nose, pharynx, and larynx, should be recognized by inspection, and receive prompt and, whenever possible, early treatment. But how can this end be accomplished? is the natural query.

In order to recognize these lesions they must be sought for by proper means. Rhinoscopic, both anterior and posterior, as well as laryngoscopic examinations must be thoroughly made. I do not believe that in the curriculum of the colleges of veterinary medicine any special course is given upon diseases of the upper air-passages, notwithstanding its almost universally accepted importance. The time has arrived, however, when every properly equipped physician of any school of medicine must be prepared to meet cases involving the nose and throat, whether for local conditions only or in connection with systemic lesions, and be able to make scientific examinations of these parts.

The only solution to this problem, I believe, lies in the hands of the colleges. A special course of didactic and practical instruction in this special line, and, furthermore, provision for post-graduate instruction, will within the near future become incumbent upon every well-regulated institution of medical training.

TUBERCULOSIS IN CHICKENS.

• BY T. A. BRAY, D.V.S.,
KANSAS CITY, MO.

It is not generally known that chickens have tuberculosis, but it is a fact nevertheless, as there is ample proof of it.

A few weeks ago one of the employés in a Kansas City abattoir asked a government inspector what those little pimples were on a chicken he was packing for shipment. It did not take the doctor long to determine what he had before him. It was a well-developed case of tuberculosis. The doctor promptly condemned the carcass.

Last summer my attention was called to a number of chickens that were sick. The owner partly made his living by raising chickens for the market, having about one hundred on hand most of the time. After looking the chickens over, and getting all the history possible, I concluded there was an outbreak of some lung-trouble, and told the owner if any should die I would like to hold a post-mortem.

As I did not receive any word about any dead chickens, and having some spare time, I dropped in to see the sick ones. It was in the morning, and on arriving at the chicken-farm I noticed a man coughing and expectorating a mixture containing blood. The spring chickens were around him pretty thick, and when he expectorated they would devour it with a relish. I didn't have to ask the man what his ailment was, as he plainly showed it; but thought it no harm to ask him a few questions.

He informed me that his name was Johnson, and that he lived next door to the owner of the chickens, and as there was no division fence the chickens had the privilege of both yards. Every morning that he felt able he would venture into the yard, and usually had a coughing-spell, and expectorated a great deal. The chickens were always on hand to pick up what he coughed up. Mr. Johnson has had a number of brothers and sisters die from tuberculosis, so that it is quite general in his family. His present condition is such that he cannot get out during this weather, and is growing weaker as his case progresses.

By the owner's consent, I killed one of the chickens, and on

post-mortem found a case of generalized tuberculosis. I also took one of the sick birds to the Kansas City Veterinary College, where a post-mortem was held. They also found a generalized case of tuberculosis.

The poultry farm lost a large percentage of their young chickens, and would have probably lost more if they had not been disposed of before showing advanced symptoms of the disease. The old chickens did not seem to take the disease, as the young birds were very quick in picking up what was expectorated, the old ones not getting a chance at the expectorated germs.

Symptoms. Standing about in a sleepy state; breathing accelerated. Other chickens picking at sick ones. Frequent coughing, which brings up a discharge from the lungs, and in the advanced stages this discharge can be found on the feathers of the back where the bird rests its head during the time it sleeps, the cough frequently disturbing its rest. This discharge dries on the feathers, and there is a great deal of it if the case has been long standing. The chicken becomes very much emaciated as the disease progresses.

Post-mortem. Liver, lungs, and walls of thorax showed evidence of tuberculosis, which was quite plain to the naked eye.

Conclusion. Chickens, as we all know, are extensively used for human food, and should be inspected as well as other food-products. Some of our abattoirs slaughter poultry on a large scale.

NOTES ON THE NODES FOUND IN THE LUNGS, CAUSED BY ACTINOMYCES BOVIS, MICRO- COCCUS BOTRYOGENUS, STRONGYLUS, ECHINOCOCCI, AND ASPERGILLUS.

By J. T. GLENNON,
STUDENT IN NEW YORK COLLEGE OF VETERINARY SURGEONS.

Actinomycosis. The germs causing this disease are termed actinomyces bovis; they penetrate the organism in various ways, but usually through the digestive tract. Infection of the lungs is generally secondary to a lesion of the jaw. In the lungs the lesions may resemble miliary tubercles. Oftenest, however, the lesions are soft, have a sarcomatous aspect, and a reddish-yellow color. At times they have the density of a

fibroma, and are of a whitish-gray color, and again they are of a spongy consistency and are formed of connective-tissue stroma, in which are enclosed numerous nodules of various dimensions, from the size of a millet-seed to a pea. Nodules are generally encapsulated, and on section the masses of germs appear as sulphur-yellow spots. Several tumors may become confluent and form small tuberculiform masses the size of an egg or larger. The actinomycoma may also undergo purulent destruction and later form a cavity.

Botryomycosis. The parasites producing this disease were discovered by Prof. Bollinger, in 1869, in the lungs of a horse; in the lungs the infection is usually secondary. Grayish-white nodules are formed, from the size of a millet-seed up to that of a walnut; they are of a fibrous nature, hard and sharply circumscribed. On section the centres of these nodes are always found broken down. The capsule is much thicker and the contents more fibrous than is the case with the nodules caused by actinomyces bovis. In botryomycosis the nodes uniting with one another may form very large abscesses containing a slimy substance mixed with pus, and on evacuation of this material cavities remain.

Pulmonary strongylosis. This disease in a nodular form is due to ova deposited in pulmonary alveoli. There are small, rounded centres about the size of miliary tubercles or even as large as a small pea, yellowish-white or sometimes dark red, and placed for the most part at the periphery of the lungs close under the pleura. They may all undergo cheesy or calcareous degeneration, but are not easily enucleated.

Echinococci. Echinococci in the lungs of cattle may undergo cheesy degeneration, and then resemble tubercles closely. They appear as areas of thick, mortarlike, yellow, cheesy matter, are contained in white capsules, and are therefore easily enucleated. The size is variable, from that of a small seed upward.

Aspergillus. Pulmonary aspergillus assumes the character of purulent follicular pneumonia. Follicles vary in size from a hempseed to a pea. Ordinarily they exist in large numbers and are disseminated throughout the entire lung and pleura. They may also become confluent and consist of a connective-tissue capsule, which is filled with pus containing fungi and separated from healthy tissue by a hepatized zone. Rarely there may be present a well-marked, diffuse pneumonia, characterized by hepatization and inflammatory infiltration of the

interlobular connective-tissue (Röckel). This condition bears a striking anatomical similarity to contagious pleuro-pneumonia. Microscopic examination is necessary to insure correct diagnosis.

SPORADIC PLEURO-PNEUMONIA.¹

BY F. A. THOMAS, V.S.,
TAVA, ONTARIO.

THIS disease possesses much interest for the veterinary profession, and is the cause of much concern to the agriculturist. Its likeness to the contagious type has led to an embargo being placed on our cattle entering the British market. Sporadic pleuro-pneumonia in its symptoms very much resembles the dreaded fatal contagious form. The reports of the English veterinary inspectors prove that they have met with only the sporadic form. The lungs and the reflexed portion of the pleura have been affected the same as we find on post-mortem examination in the local disease. Had it been the contagious form the symptoms would have been much more aggravated than in the animals condemned and slaughtered. The surroundings were so favorable that, instead of one or two animals being affected, many of the cargo would have been attacked by the disease; being stalled so closely together, and so many in number, the air which they breathed must have become more or less vitiated, which would greatly favor the spread of any contagious disease.

On the other hand, everything was favorable to the development of the local or sporadic form of lung trouble, a great majority of the animals going directly from warm stalls in stone stables to the seaport, and in all probability contracting the disease before being put aboard ship. The currents of air while in transit in the cars, especially in a night run, are the most common cause of the disease as we meet it in our practice; and the post-mortem examinations I have found correspond very closely with those described in the contagious form of pleuro-pneumonia and also with those described by the veterinary surgeons who examined the lungs of the animals found affected. The chief differential diagnostic symptoms which I have met in

¹ Read before the Western Ontario Veterinary Medical Association.

sporadic pleuro-pneumonia from those described in the contagious form have been the yellowish discharge from the eyes and nostrils and the tendency to purgation on a fatal termination of the disease.

Many cases arise from allowing a draught or cold current of air to pass through the stable until the animals become chilled, or turning them out of a warm stable to drink and letting them remain out in the cold and snow, as many farmers say, for exercise, too closely crowding in a stable with poor ventilation, and the air becoming vitiated.

The symptoms of the disease are not very well marked at the start. It is generally ushered in with chills or rigors, with a soft pulse, about 60. The breathing in a short time becomes quickened and shallow. On auscultation a crackling sound is heard over the part affected; ears and horns become alternately hot and cold as the disease advances; rumination ceases, bowels become costive, urine scanty and high colored. Temperature 104° or 105° , with considerable coughing in spells. The lungs become generally affected, and in four or five days more or less effusion can be detected in the thoracic cavity; mucous discharge from the nostrils. When standing the animals keep the elbows out from the body, and in lying keep well up on the sternum. Temperature ranges between 105° and 106° . Pulse 75 to 80. The breathing becomes painful, causing a groan on expiration, which is increased by percussion. Bowels become obstinately constipated. The animal may live for ten to fourteen days, when death closes the scene.

The treatment is generally successful when called in time. Remove the animal to a comfortable loose box, if possible, away from other animals, and protected from all draughts. Give 20 minims of aconite and 2 ounces of nitrate of potassium every four hours. Sew a large blanket around the animal, and wet it with hot water every ten minutes for six or eight hours, then rub dry; apply a mustard application over the thoracic walls. Clothe comfortably according to the season. Shut off all coarse diet, as the coarse feed passes into the rumen, and fermentation taking place causes the animal considerable distress by pressing on the diaphragm. Keep on a sloppy diet with as much linseed-tea as possible, with frequent injections to regulate the bowels. As the animal improves drop off in the medicinal treatment.

This being the disease which has without a doubt caused the

trouble in our cattle trade, our only hope for its removal is to have our government make a strenuous effort in the proper direction, by appointing a commission to thoroughly investigate it in every section where it has been prevalent, and with the united aid of the veterinary profession I feel sure we can satisfy the English authorities that contagious pleuro-pneumonia does not exist within the Dominion of Canada.

Dr. R. A. Denis, Genung, N. Y., reports the following interesting anomaly: A brood-sow gave birth to eight pigs, two males, both perfect; six females, none of which had any vulva. They were four weeks old when seen. One was killed for the purpose of examination, when a fistulous opening from the vagina to the rectum was discovered, and urine and feces were expelled from the anus. All the pigs appeared to be in good health.

The antitetanic serum prepared by the Pasteur Laboratory of Paris is not claimed to be a specific cure for tetanus, but to have its chief virtue and use in those cases where premonitory symptoms of tetanus may supervene, or where they might be anticipated; for instance, in certain stables where a number of cases may have occurred at intervals following nail or slight wounds of the extremities. Ten cubic centimetres are recommended as a sufficient dose for immunizing, which should be repeated in a week when any doubt exists. The thorough antiseptic care of wounds is the greatest safeguard in all cases.

A dog in southern New Jersey is reported as contracting whooping-cough from a child and subsequently dying in one of the coughing spells.

Röntgen rays have been used at the State University at Columbia, Mo., for the destruction of diphtheria germs in inoculated guinea-pigs, with successful results after an exposure of three hours. An inoculated pig not so exposed died in twenty-eight hours.

Fourteen quarts of milk in twenty-four hours are said to have been taken from a mare at the expiration of the period of suckling her colt.

ABSTRACTS FROM FOREIGN JOURNALS.¹

OBSERVATIONS IN REGARD TO THE APPLICATION OF CARBOLIC ACID. Prof. J. Rosenbach (Göttingen), in the medical periodical *Die Praxis*, reports a number of cases in which burning (mortification) set in a few hours after the application of a weak carbolic solution (the carbolic water sold by apothecaries, containing about 3 per cent.) to bandages. In most cases it occurred upon the fingers, which were lost in this way; weakly individuals, *i. e.*, women and children, are most liable to this danger. For this reason it has been proposed to forbid the dispensing of carbolic solutions without a physician's prescription. Rosenbach considers that such measures would be still more effective if, besides physicians, the members of the various sanitary boards were informed of the danger of carbolic gangrene.—*Thierarzt. Centralblatt*, Jan. 1, 1896.

CATTLE-LEGISLATION IN AUSTRIA. At the session of the Austrian Landtag, December 14, 1895, representatives von Proskowitz, Tausche, and colleagues addressed a communication to the Minister of the Interior, in which they referred to the late decline in prices in the Vienna cattle-market and in the markets of the other crown lands; to the condition of the Vienna cattle-market, and to the circumstance that, in spite of a marked decline in the price of cattle, the price of meat in Vienna had not been lowered. They then asked the following questions: 1. Does the minister intend to cause the report of the Agricultural Committee in regard to allowing the importation of cattle over the Roumanian boundary to become immediately the parliamentary order of the day? 2. Is the minister inclined to favor the enactment of regulations concerning the sale of meat in all lands, in order that this important article of food may be reduced to prices within the reach of the whole population?—*Ibid.*

EMPIRICS IN AUSTRIA. At a session of the Austrian Landtag, December 18, 1895, in discussing a proposition of the Minister of the Interior, representative Dr. Ebenbroch spoke of the great need of veterinary surgeons in the country districts, and opposed the report of the Committee on Veterinary Epidemics, which

¹ Under the general direction of J. Preston Hoskins, Princeton, N. J.

recommended the education of veterinarians, who should first pass through an intermediate school and then study four years at a veterinary high school. He asserted that the agricultural conditions need cheap, practical veterinarians who are thoroughly conversant with the conditions in the country. Whether they are masters of the theories and the medical classics is a matter of indifference. The admission of the blacksmiths who had been employed in the army to veterinary practice was to be especially recommended. As to the agreement with Germany in regard to epidemics, he maintained that the division of Austria into two epidemic districts should have been made long ago. He then made complaint about the laws respecting epidemics, which, he maintained, had been enforced with too great severity.

Freiherr von Erb, representative of the government, remarked, in regard to the need of veterinarians, that the abuse of the laws prescribing the punishment of empirics had ceased, that a certain group of veterinarians who stand between those with a diploma and the empirics are useful to a certain extent. The ministry had already made the suggestion that the elements of veterinary medicine should be taught in all the agricultural schools. But to make such half-educated people the equals of veterinary surgeons with diplomas was impossible. The use of severe measures in carrying out the epidemic laws had not been necessary in Austria in recent years. Severe quarantine regulations in Salzburg had been necessary, because the presence of epidemics there had several times been kept secret.—*Ibid.*

LAWS FOR STAMPING OUT CATTLE-TUBERCULOSIS IN FRANCE. A bill which aims at stamping out cattle-tuberculosis in France is now before the French parliament. The chief regulations are the following: All cattle which present the clinical symptoms of tuberculosis are to be killed immediately. The prefect of the district shall issue the order for slaughter. Cattle whose clinical symptoms awake suspicion that they may be sick with tuberculosis are to be subjected to the tuberculin-test. The animals which react after this test are to be killed. If tuberculosis is established in a living, slaughtered, or dead animal, all the cattle which have been with it in the same pen or pasture are to be subjected to the tuberculin-test. The animals which react are to be sold, and are to be handed over to the butcher within the period of one year. This period, on report of the Committee

on Epidemics, can be prolonged by the Minister of Agriculture, but the owner then loses all right to indemnification. Every animal which reacts upon the tuberculin-test and which shows the clinical phenomena of tuberculosis during the period of observation is to be killed immediately. In the case of complete or partial confiscation of the flesh of tuberculous animals, the owners, if the killing is due to this enforcement of the preceding regulations, shall receive the following indemnification: 1. One-fourth of the value of the meat confiscated if the animal has been killed in consequence of an order from the prefect. 2. The half of the value of the meat confiscated if the animal, in accordance with the regulations of Art. 3, has been handed over to the butcher within the period of one year, and showed no clinical symptoms of tuberculosis. The confiscation of meat in every other case gives no right to indemnification.—*Ibid.*

INCREASE IN THE NUMBER OF MILITARY VETERINARY SURGEONS. In accordance with an order of his majesty, the Emperor, the state of the military veterinary classes in time of peace, from June 1, 1896, is as follows: 22 superior veterinary surgeons of the first class; 22 superior veterinary surgeons of the second class; 44 military veterinary surgeons; and 36 inferior military veterinary surgeons.—*Ibid.*

FOR THE PREVENTION OF MISTAKES IN THE HANDLING OF MEDICINES. According to an ordinance of the Ministry of the Interior of Oct. 2, 1895, for preventing the mistakes in the handling of medicine, powerful drugs must be kept and dispensed in bottles of a *particular* shape which shall be provided with a durable label. The use of paper labels for such medicines is strictly forbidden. The editor of the Austrian *Sanitätswesen* remarks: Paper labels are superscriptions upon paper which are merely fastened to the bottle by means of paste. If the writing on the paper by some corresponding means of stamping or coating over is fixed inseparably to the glass wall of the bottle, and so that it cannot become blurred or blotted out, it is no longer a question of mere paper labels. According to this interpretation paper signatures, if they are coated over with collodium and lacquered, are admissible. The ordinance concludes with the regulation that the measure be brought to the knowledge of the associated physicians and the association of apothecaries in order that a strict observance of the law may be attained. Since the interpretation in regard to the paper signatures may

be considered as official, some agreement as to the shape of the different bottles to be used seems to be all that is now needed.—*Ibid.*

TETANUS-CURE BY A SUDDEN SHOCK TO THE NERVES. The report of an original cure for tetanus by a sudden and very severe shock to the nerve-system, in No. 21 (1895) of the *Thierarzt Centralblatt*, recalls to my mind a similar occurrence which was related to me while a student by the deceased veterinary surgeon, P. Johnson Zimmer, who lived in my native village, Pechtoldsdorf, in the neighborhood of Vienna. The dead colleague, whose honorable character is well-known to many members of the profession still living, related to me that he cured a horse which had already become stiff by exciting him highly by firing off a pistol several times quickly in succession, in the stall beside him. This caused a severe sweat to break out upon the horse, and the cure consisted in pouring cold water over the horse from a considerable height and then rubbing him down. The result was that the horse recovered. Where Zimmer learned this cure I have forgotten. However senseless this treatment of tetanus appears in regard to the apparently contradictory effect in the use of powerful means of excitement, yet the occurrence of reports to the same effect from different places is at least worthy of consideration, and I would not hesitate to try it with the full knowledge of the owner.—*Ibid.*

STUPEFYING ANIMALS BEFORE SLAUGHTER. Toward the end of last year a law was introduced into the German Reichstag providing for the stupefaction of all animals, excepting poultry, before slaughter. In lieu of the same a committee of the English Royal Society for the prevention of cruelty to animals in slaughtering and the Jewish butcher commission in Manchester have offered a prize of \$500 for some preventive means by which an animal can be held fixed and in position for the death-blow or cut. Further conditions can be secured from the secretary, R. S. P. C. A., Manchester, England, Albert Square 9.—*Ibid.*, January 15, 1896.

BACTERIOLOGICAL COURSE FOR VETERINARIANS IN BADEN. According to the announcement of the Baden Ministry of the Interior in November, 1895, a bacteriological course for veterinary surgeons will be held in January of this year in the Bacteriological Institute of the Technical High School in Karlsruhe.

The course lasts ten days, and can be attended free by the district veterinary surgeons of the Grand Duchy. A course of wider scope has for a long time been agitated by the Austrian Society of Veterinarians, and it is hoped that the friendly compliance of the professors in the Vienna Veterinary School will soon be realized. The request from the central committee has already been handed in.—*Ibid.*

TWO CASES OF ACTINOMYCOSIS TREATED WITH IODCALIUM. By J. Meisinger. In August, 1894, I was called to treat a cow in Radstadt, which, on account of swelling of the tongue, could not eat, according to the statement of the owner. She stood slaving in the stall, her tongue hung about 2 cm. out of her mouth, was very considerably enlarged, and in places lumpy and hard. It could be moved only a little, and was yellowish in color. The cow had been nourished for about three weeks by pouring into her from a bottle a liquid mixture of bran and lentils. The owner did not call in a veterinary surgeon until she refused to take this mixture longer, after which time several veterinarians tried their skill in treating her for two or three months without success. I gave her 6 g. iodide of potassium dissolved in lukewarm water three days in succession. On August 16th she had drawn her tongue back somewhat, and a strong matter-like excretion at the nose was present. The same treatment continued for three days longer attained the result that the cow began to eat for herself. When I examined the animal not long ago I found the tongue smaller and softer; excretion at the nose was no longer present. The same solution of potassium iodide was given continuously until Aug. 31st, when I declared the cow wholly recovered. She was sold in the year 1895 without anything unusual being noticed about her.

On the 2d of July, 1895, I was called to Ennsward, where I found a young cow with similar symptoms. The tongue was very much enlarged, hard as a board, immovable, and of a salamander-yellow. The swelling of the tongue in the throat-entrance could be felt as a hard spherical lump. The animal was likewise kept alive for weeks with liquid nourishment. I gave the same dose, as in the first case, for six days, and had the hard lump at the entrance of the throat painted with tincture of iodine. On the 11th of July the swelling in the throat was very small; the tongue was already softer and smaller. On September 20th she could be driven out to pasture, and began

to eat slowly. The same treatment, without the tincture of iodine, was continued until the 28th of September, when the cow was considered cured.

A microscopical investigation was not possible; but, nevertheless, I believe, without doubt, that both were cases of actinomycosis, as the disease is frequently observed here, and swelling of the jaws occurs quite often.—*Ibid.*

PERIODICAL LAMENESS IN THE HORSE. T. A. L. Beel reported a case of a Geldersland mare, about eight years old, which showed periodical lameness every ten days. The first time about ten days before, while being driven. Although she had come out from the stall sound and well, the left hindleg began gradually to be moved less nimbly toward the front, and after a while she dragged it over the ground, while a sweat broke out over the whole body. After resting awhile the mare regained control of her limb. On the way back the same thing occurred near the stable. After this the mare was given a rest of some days, and no lameness was noticed until she was driven again. The interval between the harnessing and the appearance of the lameness was at first about a half-hour, afterward fifteen minutes. For the purpose of witnessing the onset of the lameness, being too far away from the house to make a daily examination, I had the patient hitched up in the threshing-machine. After a quarter of an hour a trailing of the near hindleg showed itself plainly, and developed quickly into a dragging, after which the animal began to sweat over the whole body. The mucous membranes became deep red, the eye had a staring look, and the mare could not move from the spot. The near hindleg did not perspire at all; on the inner surface especially it was as cold as ice, and was held stretched out toward the rear and turned outward. Pricking it with a pin was felt to a less degree than should have been the case. On closer examination an increased pulsation of the basilar artery could be noticed far toward the front. I could not convince myself, however, of any change in the bloodvessel behind the place of increased pulsation. Presumably pulsation was very much retarded, inasmuch as the horse was very fat. During the attack, which lasted five minutes, the patient continued to look around at its leg, probably on account of the "sleepy feeling." Gradually the horse began to move again, but the attacks recurred then more quickly. Apparently it was a case of stagnation of arterial blood from the

muscular system, especially from the near hindleg, the result of obliteration (reduction to a low state) of the artery leading to it. My prognosis was unfavorable, and treatment (in order to please the owner) consisted in perfect rest, smearing the rump and hindlegs with a light liniment, together with the application of Priesnitz's poultices. By the increased flow of blood toward the rear parts the production of a collateral circulation of blood was furthered. The patient was allowed to rest until the beginning of April, and then seven months later put to work, without a return apparently of the trouble, recovery having taken place.—*Tijdschrift voor Veeartseuijkunde en Veeteelt.*, January, 1896.

TUBERCULOSIS AT THE INTERNATIONAL VETERINARY CONGRESS. Professor Bang began with the remark that since the infectiousness of tuberculosis had been generally recognized many intelligent cattle-owners had striven to lessen the mortality caused by the disease by immediate isolation of infected animals, by not using such animals for breeding purposes, by thoroughly disinfecting the cattle-pens, stalls, etc. Although these means have been productive of good effect, yet they had not come up to expectation, inasmuch as latent cases still remained, and the disease constantly reappeared because there was no means of distinguishing the latent cases; a means was finally found through the great discovery of Dr. Koch. That a diagnosis by means of tuberculin reaction can, as a rule, be established with certainty is, according to Bang, no longer doubtful; but there still exists great difference of opinion in regard to the questions: How often and under what circumstances can wrong diagnosis occur, as well as whether there is danger in the use of tuberculin? According to his report at the Hygienic Congress at Budapest in 1884, Bang placed the number of mistaken diagnoses at 9 per cent. as the result of his investigations. According to his later experiments this figure remains about the same, namely, 9.7 per cent. According to the reports published by Professor Eber not long since, the result is even more unfavorable, reaching as high as 13 per cent. The erroneous diagnoses are of two kinds: 1. Animals may react to tuberculin without the veterinarian being able to show tuberculosis at the autopsy. In regard to this point the speaker emphasized the great difficulty sometimes encountered in detecting the minute tubercles, although present, *e. g.*, in the remote lymph

glands, especially when the post-mortem is held by some person little skilled or who did not go about the work with the requisite care and exactness. But he himself in three cases, in which typical reaction had taken place, had been able to find absolutely no tuberculous changes. In one there was found some pyelitis and chronic fibrous nephritis. In the organs affected streptococci and other bacteria were found, but tubercle-bacilli were absent. This is the only case that Professor Bang has had under his care in which the reaction was caused by another chronic, non-tuberculous disease, as has often been stated to be the fact in the literature. He called attention further to the fact that animals which suffer from carcinoma or actinomycosis may at the same time be tuberculous, and in tuberculous processes this fact is often lost sight of. When the result of the autopsy is purely negative in animals that have reacted normally, there must always be doubt as to the existence of tuberculosis.

2. Mistaken diagnosis, where tubercle-bacilli are found present, in spite of the fact that no reaction has taken place. According to his experience this is the case in very insignificant or in thoroughly calcified (reduced to chalk) tuberculous centres, often so old and so perfectly calcified that the investigator involuntarily thinks of a healing process. Although the tuberculin reaction cannot be regarded as infallible, and a diagnosis arrived at through it cannot be offered as proof in judicial cases, nevertheless it has *sufficient value*, according to the results recorded, to *serve as the means* of extirpating tuberculosis. It does little harm if a few non-tuberculous small animals, afflicted with other chronic diseases, are isolated in company with tuberculous ones, even if now and then it should happen that an entirely healthy animal is grouped with infected ones. Great injury may result, on the other hand, if, on the removal of healthy animals from infected places, tuberculous animals should be included among them. Besides, Bang adds that, whenever the tubercular process is extensive, the clinical symptoms will certainly show it, whereas if only calcareous tubercles occur at isolated points in the lymph glands, such animals are certainly *for the time being* not dangerous as communicators of infectious matter. If the tubercular process should extend it can be shown by a subsequent inoculation of tuberculin. Of far greater importance is the question whether tuberculin injections cause an exacerbation of the disease, as has been asserted by Professor Hess. According to Bang's ob-

servations, on a large scale, it seems that after inoculation with tuberculin acute miliary tuberculosis occurs only exceptionally, and that this is to be feared only in cases of extensive or far advanced tuberculosis; it occurs, however, when no tuberculin has been used, so that there is no proof that it has been caused by inoculation. If the assertions of Hess be correct, then in herds of cattle in which tuberculin inoculation has been repeatedly done, tuberculosis should prove an extremely unfavorable course; but this is not the case, as Bang proved by a number of statistics. In Denmark tuberculin-inoculation has been practised for years on an extensive scale, and its use is still increasing. This would certainly not be the case if by its means the disease was aggravated. On the contrary, the health of the cattle is constantly improving. As has been remarked, only by tuberculin-inoculation are we in a position to determine the extent of the disease; it seems that the latent form of the disease occurs to a large extent among herds in which tuberculosis has been found; the number reaches sometimes even 70 to 80 per cent. As a result of very careful autopsies on such animals it appears that the disease-process consists merely in small tubercles, mostly in the lymph glands, especially the retro-pharyngeal, bronchial, mesenteric, and mediastinal. Bang gave further the result of tuberculin-injection in 46,495 animals in 1675 herds. The number of animals that reacted amounted to 18,399, or 39.6 per cent., while in 28,096, or 60.4 per cent., no reaction followed. The reaction was very different in the different provinces, depending upon the fact whether cattle traffic was common or whether the herds increased through breeding. In 1170 herds all the animals were inoculated, the number of animals was 30,617. In 93 herds the average number of animals was over 50, in 1077 less than that number. In the larger herds the number of animals that reacted was 59.6 per cent., in the small herds only 33.1 per cent. In the whole number 255 herds were free from tuberculosis; *i.e.*, 252 small herds, but only 3 large herds. In regard to the ages of the animals he noted a great difference in the time of appearance of the tuberculosis. The older the animals the greater the number which reacted. In animals six months old it was only 15.7 per cent., in those one year old 30.3 per cent., in two-year olds 40.6 per cent., and in full-grown animals 50 per cent. According to Bang this is a proof that the disease, as a rule, is spread by infection and is not hereditary. In his opinion

one of the principal causes of the disease lies in the use of milk from tuberculous cows.—*From the report of the International Veterinary Congress in the January number of "Tijdschrift voor Veeartsenijkunde."*

CELEBRATION OF THE BELGIAN VETERINARY FEDERATION IN HONOR OF PROFESSOR ALPH. DEGIVE, STATE DIRECTOR OF THE SCHOOL OF VETERINARY MEDICINE. On December 15, 1895, there was a grand demonstration in honor of Professor Degive. Ever since the elevation to the Presidency of the Royal Academy of Medicine, an event without precedent in the history of the veterinary profession, there had been an unanimous desire among Belgian practitioners to celebrate this event by an official demonstration. The enthusiasm was increased by another event of which the veterinary profession should feel proud, namely, his promotion to the rank of Officier in the Order of Leopold. With one voice the federation decided to celebrate this double distinction with all the *éclat* fitting the occasion, unveiling a bust to his honor, and giving him a banquet. The subscription list was almost completed on the spot, and the whole Belgian corps of veterinarians supported the movement initiated by the federation. The ceremony of unveiling the bust took place in the great auditorium of the school in Brussels, in the presence of a vast concourse of practitioners. A platform upon which the bust had been placed was profusely adorned with flowers and plants, and seats upon it were reserved for Professor Degive, the Bureau of the Federation, and invited guests. At noon exactly the *hero* of the occasion was introduced by the president of the federation amid great applause. M. Bronwier, an honorary member of the same, and member of the Chamber of Representatives, then delivered an eloquent address, in which he reviewed the great services of Professor Degive, and the great debt which the profession in general, as well as Belgium, owed to him. At the close of the address, amid thunderous applause, he unveiled the bust, which is a striking resemblance of Professor Degive. After the applause had subsided, M. Conreur spoke in the name of the students of the Ecole de Cureghem, emphasizing the debt which the students of veterinary medicine owed to the revered teacher. After the platform had been almost deluged with flowers, Professor Degive arose, and, in a voice full of emotion, delivered an eloquent address. He referred feelingly to the great honor which the medical profession had paid

to veterinary science in elevating him to the Presidency of the Royal Academy of Medicine; he thanked his co-workers fervently for the great honor which they were paying to him, and closed with an eloquent peroration on the ideals which should ever inspire the veterinarian to new effort and enthusiastic service. After this ceremony was over a banquet was held at the Hôtel Métropole, at which M. Bronwier presided. After drinking the health of the King, and then to Professor Degive, M. Bronwier made a short speech. Several toasts were then drunk, which were responded to by Professor Degive, M. Demarbaix, Professor at the University of Louvain; Dr. Jacobs, Professor Labo, and others.—*Annales de Médecine Vétérinaire*, January and February, 1896.

REPORTS OF CASES.

AN INGENIOUS AND USEFUL DEVICE.

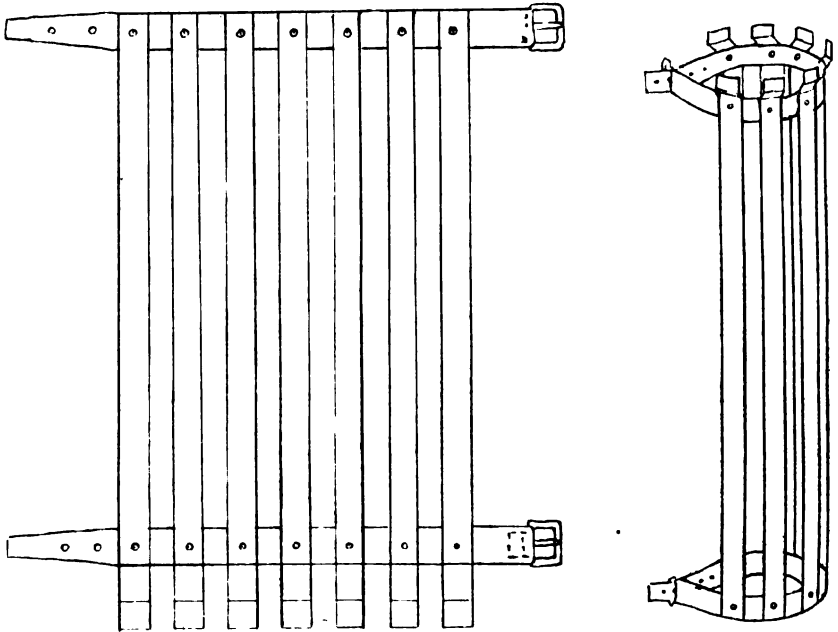
BY D. McNAUGHT, V.S.,
RAPID CITY, MANITOBA.

IN all our veterinary literature I have never seen any appliance to keep a poultice on the knee or hock of a horse or cow, and such things as poultices, cold and hot appliances, are constantly necessary in our practice, in broken knees, kicks, and wounds of various kinds. Where city practitioners have an infirmary with all the appliances for the continued application of hot and cold water, etc., many things can be done. But most of the actual practice is done in farmers' stables, where no appliances are at hand. There a man must be shift and suit himself to his surroundings.

A very bad case of broken knees brought out this simple little invention, and I now give it to the profession for what it is worth. It is both simple and cheap, and can be made by any veterinarian, and there is no patent on it.

It consists of two straps and seven pieces of hoop-iron as light as will sustain the weight of the poultice. The straps are ten inches long and three-quarters of an inch wide, of good stout leather, with a buckle on one end. Lay down the straps fourteen inches apart, or whatever length is required for the animal under treatment; cut off seven pieces of light hoop-iron three-

quarters of an inch wide, with two holes in each, as represented in cut, rivet on with short copper rivets, keeping the head inside on the leather, then in a vise, or any other way handy, turn over one inch. Then turn the last inch up, as shown in cut, having previously rounded the corners so as not to catch or



Scale, $\frac{1}{4}$ inch to 4 inches.

tear the application. Take a soft rag and wind around the lower strap so as to make it rest easy on the foot; also a small quantity around the top so that it will adhere more closely to the leg. This appliance can be made by any handy man at a cost of not more than fifty cents, and will last for many years by keeping the band-iron well oiled.

ASCARIS MEGALOCYPHALIS IN THE HOG.

BY A. YOUNGBERG, D.V.S.,
LAKE PARK, MINN.

ON February 28, 1896, I was called to examine a drove of swine, numbering seventy-five, at Glyndon, Minnesota. Prior

visits to this farm always found the swine in good condition, but on this occasion they were in extremely poor condition. Inquiry revealed the fact that they had been in ill-health two months. The attendant informed me that a mixture of salt, sulphur, ashes, and charcoal had been administered. Fall pigs seemed to suffer most.

Symptoms. Hair standing upright; very much emaciated; some were coughing; others paralyzed and unable to walk. One lot, numbering seven of the poorest in flesh, were separated from the others and had received daily a half-tablespoonful of carbolic acid and a tablespoonful of turpentine in linseed oil, but without any noticeable results.

Autopsy. I requested the destruction of one of this lot for autopsy, and examination revealed the presence of myriads of ascarides, both in the stomach and large intestine. Another was destroyed, and revealed the existence of large numbers of these parasites. The mucous membrane of the stomach and large intestine was highly congested, and the peritoneum presented a similar appearance.

Treatment. Ordered complete abstinence from food for thirty-six hours, after which powdered areca-nut was administered in milk, and followed three hours later with a large dose of chloroform and castor oil. This treatment was repeated forty-eight hours later. A letter received from the farm later reported the treatment as effective in bringing from the animals large numbers of the worms, some alive, others dead.

Dr. Charles F. Dawson, of Washington, D. C., recently discovered an outbreak of swine-tuberculosis in Maryland.

The weight of opinion seems to favor the prompt removal of the calf from the mother as soon as born, and feeding the calf artificially. In young stock it is claimed that nothing tends to restrict the capacity of the udder and lessen the amount of milk produced more than the custom of allowing the calves to suckle the mother.

Powdered horse-chestnut has proved very beneficial in another case of pulmonary emphysema of a year's standing during the past month at the Philadelphia Veterinary Sanitarium. Half-ounce doses were given twice daily in mixed feed, with an almost complete abatement of the distressed breathing so marked at the onset.

EDITORIAL.

VETERINARY JOURNALISM.

THE *Veterinary Magazine* for April comes to us in a new dress, and the improved appearance is very noticeable. The adoption of a highly finished paper and the change of type add greatly to its attractiveness, and now that it is fully up on time with its numbers we bespeak for it a strong place among the readers of veterinary periodicals in our country.

The *American Veterinary Review* for May comes to its readers in a more attractive form than ever, and exhibits a determination to fully sustain its long and prosperous career. A slight change in the color of the cover-pages, a more highly finished paper and new type of a very readable size will add greatly to the pleasure of its many readers. The great development in the journalism of our profession during the past two years bids fair to extend our usefulness and power to wider fields, and it is hoped that these journalistic efforts will receive suitable recognition. The JOURNAL takes to itself a part of the credit for this general improvement all along the line, and though it has all taken place at a time when the support of journals is least promising, it shows a determination to win support by deserving it.

THE DANGER OF LIVING IN GLASS HOUSES.

No country has placed more embargoes on our animal food-products than Germany; yet of 50 preparations sold in their markets for coloring and preserving meats 27 contained boric acid. Of 154 samples of butter examined, no less than 45 were adulterated, and yet they have repeatedly charged this country with sending them impure food-products, and placed obstacles in the way of the sale of our animal food-products that would lead one to believe that the supervision and examination on their own soil were so complete and perfect that only pure foods could be sold on their markets. People who live in glass houses should not throw stones, and there will henceforth be a stronger

belief in the fact that our food-products are kept out because they are better and cheaper than their own.

WHAT WILL THE OTHERS DO?

ANOTHER of the two-year schools places its name at the masthead of the school of ships now requiring a three-years' cruise of six months each on the waters of knowledge before its mark of proficiency will be granted to those who enlist under its colors. This step of the National Veterinary College will place it among the strong competitors for the future, and it will not lag in the race of recognition, for none have ever doubted the ability of its teachers or the excellence of its instruction; they only regretted that too short a time was afforded its matriculants to properly take advantage of the valuable instruction there afforded them. Its sincere friends and the tried and true advocates of higher veterinary education regretted, with a keen sense of sadness, that it was not a four-year school, or one where a post-graduate course was obtainable. It will now command a support that will add vastly to its growth and power, and it will realize at once that nothing will be lost from this advance step. It will wield a stronger power for good, to the general advancement of the profession than most others could do, be they ever so willing, and none will reap a greater direct reward than the school itself. Its location and associations, and the environments that have grown so strong and powerful in making Washington one of the great educational centres of the future, will add no little to its growth and development, and win for its projectors a high place among the roll of colleges. As predicted by this JOURNAL many months ago, the cause of higher veterinary education will never again turn its face backward, and the future of the other two-year schools is now decided and determined. They may, for a time, face the current of popular opinion, and remain as they have been; but the gathering storm, fostered and suppressed amidst its own waters, will speedily wrest them from their unsafe moorings and engulf them in the waters of oblivion, forgotten and unmourned. Hasten the final battle.

The Detroit Veterinary College desires it to be known among the profession that they early contemplate the establishment of

a three-years' course. Expensive buildings are in course of erection, to be ready for occupancy at the coming session in October next. A complete reorganization of the faculty will be consummated, and a more thorough course of instruction inaugurated. The Secretary of the Faculty says that the recent retirement of Professors Brenton and McEachran was not because of the short curriculum, but for other valid reasons.

CANADIAN DIPLOMACY AND OUR CATTLE-EXPORTS.

IN these days of so-called diplomacy, one's friendship and respect for their colleagues of sister nations are greatly strained. Like charity, diplomacy covers a multitude of sins, and one is made at times to feel that he would like to see in operation the more direct means of accomplishing the ends to be served, because they are more honest and open.

Why our colleagues and friends in Canada will continue to try to prevent the exportation of American cattle from Canadian ports on the flimsy grounds that it endangers their market in certain countries, because of the imaginary existence of certain contagious and infectious diseases among our cattle, is too absurd, and flavors too strongly of dishonest and extremely selfish purposes.

If our growers of cattle are willing to accept smaller profits for their stock to the impairment of Canadian gains, why not be honest with us and so state it, and not attempt, under the cover of diplomacy, to cast a reflection upon our cattle-interests on the grounds of dangerous infectious and contagious diseases, that our professional *confrères* in Canada know to be untrue.

WE would call the attention of our readers and the profession in general to several important and interesting local meetings of veterinary associations, all of which promise instructive gatherings as well as social pleasures and privileges, which in these trying times are the greatest safeguards in maintaining the true spirit and common purpose of our profession and renders more potent our force and influence in commanding more generous recognition and support at the hands of the people.

DEFEAT SENATE BILL 1552.

EVERY true friend and advocate of scientific investigation and research which have added so much to the world's progress in the sphere of medicine and surgery through experimental work on the lower animals, and by which so much relief has been afforded the suffering ones of the human family, will with one accord join in the dignified and wise protest of the American Medical Association against Senate Bill No. 1552, which has for its aims prohibitory provisions against experiments on the lower animals. In these days of so much new light upon the treatment of diseases in the better and more reasonable lines of research, prohibitive measures of this kind are almost criminal; for none would sustain or pardon the testing of these agents and measures on the human family until their thorough, careful, and patient trial and study from every standpoint upon the lower animals, which this measure is designed to retard and prevent. This should receive the emphatic protest of every veterinarian in the land, and we trust our readers will take this opportunity of writing their representatives in the lower House, and thus restrain the adoption of a measure that is fraught with so much danger to the true progress of medical science.

THE NEW YORK REGISTRY BILL.

THE bill passed by the New York Legislature on May 22, 1896, provides the privilege of registration for those graduates who had so failed to do during the time allowed for the same, and they may now register through unanimous recommendation of the State Board of Veterinary Medical Examiners to the Board of Regents. But they will not again be thus favored, save through the regular examination; and all those who have failed to register are now enabled so to do, but will receive no further consideration at the hands of the veterinary organizations in the Empire State. Secretary Kelly is anxious that a prompt compliance be made, so that time and money may be spared in seeking needless legislation in the future.

CORRESPONDENCE.

THE JOURNAL received the following letter from Dr. Cecil French, of 714 Twelfth Street, Washington, D. C., who is taking an active interest in this laudable undertaking, and we trust by giving it publicity in the JOURNAL that we may contribute to its successful attainment.

For some time the National Zoological Park has possessed in its collection a few of the various breeds of dogs, which have been kindly presented or loaned.

It is the intention of the officials, in order to provide object-lessons at the Capital for the people of the United States, to bring this department of the animal collection up to as complete a condition as possible. Accordingly an extensive and modern system of kennels is to be erected during the summer, so that every breed may be represented.

The appropriation voted by the House of Representatives for this institution cannot be devoted to the purchase of any animals; at the same time a clause prohibits selling of the same. Consequently the Park has to depend on gifts or loans of animals.

The officials of the Park have instructed me to extend to the leading kennel-breeders of the United States an invitation to coöperate in this movement, which is distinctly national in character, without attachment of any personal interest whatever. They desire that I request of you either the gift or loan of a representative of the breed in which you are interested. Acknowledgment of the same will in every case be made permanent by printed placard over each kennel, stating in bold letters the name and address of the donor or lender. The advantages that will accrue to the said donor or lender cannot be overestimated when regarded as an advertising medium, because the collection will take the form of a permanent exhibition to the many thousands of visitors from all parts of the country.

The officials will, of course, be gratified to receive a clear gift from you, but should you not see your way clear to this, will be very glad to receive a specimen as a permanent loan. In the case of a bitch, which would be preferred from an educational point of view, inasmuch as any young that might be bred would be interesting and instructive, the progeny would be considered the property of the lender, and would be returned or disposed of according to his directions.

In cases of sickness the best of medical attendance will be promptly given. The kennels will be in charge of competent attendants, and full information of the characteristics and points of the breed will be printed and attached to each kennel. All charges incidental to the removal and transportation of the animals will be borne by the Institution.

Dr. G. Leo Hagen Burger has received an appointment as milk-inspector for the Health Department of Brooklyn, N. Y.

CONTROL WORK.

Pennsylvania. Influenza of a very severe type is epizootic at Sewickley and vicinity in the western part of the State.

The prevalence of tuberculosis in western Pennsylvania and the reported sale of condemned cows for food have aroused the health authorities to vigorous measures.

The veterinarians of the Schuylkill Valley, fully alive to the duties devolving upon them as an organized body, have issued a very strong circular to the various Boards of Health in their district, urging the appointment of meat- and milk-inspectors, and a strict surveillance of all markets, slaughter-houses, and dairies. Many interesting statistics are given in the circular.

The western part of Pennsylvania, including the cities of Allegheny and Pittsburg, is much exercised over the prevalence of rabies, glanders, and bovine tuberculosis. The services of Messrs. McNeil and Lacock, City Veterinarians of Pittsburg and Allegheny, have been retained by the State Veterinary Sanitary Board to direct the management of the outbreaks.

A large number of dairies in the Lehigh Valley adjacent to Wilkesbarre, Scranton, and other towns are being examined for tuberculosis under direction of the State Sanitary Board.

Wilkesbarre will have the opportunity of judging the beneficial results of a pure and wholesome milk-supply through the organization of the Hygienic Milk Co., which will furnish milk from dairies kept in the most approved sanitary conditions. The cattle, to insure freedom from tuberculosis, are examined at stated intervals.

Sewickley will have some thirty head of cattle to destroy on account of tuberculosis, out of some six hundred tested with tuberculin. Dr. H. S. Jackson, of Sewickley, and Dr. Robert Jennings, of Pittsburg, have been conducting the investigations. Fifteen of the Economy herd are also under condemnation, and have been ordered destroyed by one of the Trustees of the Harmony Society. The Sewickley Board of Health is considering an ordinance requiring an examination of all herds furnishing milk to that district. More active State measures are con-

sidered necessary by the people and the Board of Health of Sewickley.

The fifth victim of hydrophobia is reported at Hazleton, Pa., where an outbreak of rabies of considerable extent occurred some weeks ago. It is now suggested that a general dog-killing crusade be inaugurated, which surely would be a stroke of false policy.

Virginia. Very active discussion, having its chief centre at Richmond, is now going on over tuberculosis among cattle, and the need of milk- and meat-inspection is being thoroughly agitated. The work of examining herds under the recent law passed to control contagious and infectious diseases among live-stock is extending, and its good influences are being felt by a number of communities. One very valuable herd of twenty cows near Richmond, supposed to be in perfect health, revealed on tuberculin-test six diseased ones, all of which were found affected when destroyed.

A very interesting question has arisen in this State in a herd of very valuable cattle, tested some two years ago by representatives of the Bureau of Animal Industry, when some responded, but were not all destroyed. Recently, under the pressure of public opinion, this same herd was again tested, and a number of those which responded at the first test are said to have failed on the second test, and the question naturally arises, How many of these should be taken from the herd and destroyed? If the first test was a reliable and trustworthy one, the question naturally arises, Have these animals recovered from that one injection or was the last test an imperfect one?

Missouri. The cattle in and adjacent to all large cities in Missouri are to be tested with tuberculin under the direction of the State Board of Health. Dr. T. E. White, State Veterinarian, aided by Dr. Conway, will make the tests.

Connecticut. Gratifying progress in controlling tuberculosis in this State under the present laws is reported. Although the use of tuberculin as a diagnostic agent is optional with cattle-owners, the applications for the test come in more rapidly than can be attended, and from many who a year ago were opposed to this plan of determining the existence of the disease. Tuberculin has proved an absolutely reliable test, and no errors are

charged to its account as yet. The destruction of the animals has been done in public, unless objected to by the owner, and this plan of education has proved effective and won over many friends to the mode of extermination.

Nebraska. The Nebraska Experiment Station for the past year has been working on the lines of an antitoxin for hog-cholera, and so far with very gratifying results. Pregnant sows and some hogs affected at the time of treatment have been experimented with, in all of which promising favorable results were obtained.

Kansas. The suit of the cattlemen against the Missouri, Kansas, and Texas Railroad Company, and shippers over the same, for shipping cattle into the grazing country and spreading Texas fever among their stock, has been decided at Topeka, and the cattlemen awarded \$50,000 damages. This decision is by the Supreme Court, and sustains that of the lower court.

National Acting-Secretary Dabney, of the Department of Agriculture, has issued orders to all inspectors to see that all animals coming under their direction and control be properly fed, watered, and humanely treated by all employés and by all railroad, stock-yard, and other employés, to lessen the suffering losses, etc., incidental to the cattle-industry.

Texas. The so-called Texas horsefly is reported to have already begun its disastrous season's work. A reliable remedy for the destruction of this parasite is much desired.

Indiana. The Indiana Live-stock Sanitary Commissioners, as a result of heavy losses from hog-cholera, will establish a rigid quarantine this year. Railroad companies will be required to thoroughly disinfect their cars, burn all straw and refuse in stock-yards every seven days, and disinfect the latter at least once a month, under a penalty of \$500 in case of violation.

Massachusetts. Reports come to us from the Food Commissioners showing a general improvement in the whole milk-supply of the State, less disposition to adulterate, color, or add injurious preserving agents, because milk taken from healthy herds in good sanitary condition and clean surroundings will keep in good condition a sufficient period of time to permit its sale at a profitable price. Let the agitation for a pure and whole

some food-supply go on, and many more such reports will annually come to us in the future.

In Boston a rabid dog produced a panic among the children in a school-yard, and succeeded in biting one of them before being killed. An adult was also bitten before the dog reached the school.

New Jersey. One of the larger cities of northern New Jersey has been the centre of a hydrophobia scare, caused by the appearance of a rabid dog which succeeded in biting several persons before he was shot.

COMMENCEMENT EXERCISES.

DETROIT VETERINARY MEDICAL COLLEGE.

THE Veterinary Department of the Detroit College of Medicine held its Third Annual Commencement in the College Building, Thursday, April 2. The large lecture-hall was decorated for the occasion. The programme consisted of instrumental and vocal music, presentation of prizes, and addresses by the speakers of the evening, Dr. Charles Douglas and Hon. J. W. McGrath. Dr. H. O. Walker, Secretary of the Board of Trustees, in a few well-chosen words, conferred the degree of D.V.S. upon the successful candidates, as follows: A. J. Daiber, Detroit, Mich.; W. D. Seibert, Petoskey, Mich.; A. E. Sager, Dresden, Ontario; Z. Veldhuis, Grand Rapids, Mich.; J. E. Ward, Williamston, Mich.; J. Murray, M.D., Detroit, Mich.

The Department has bright prospects of a future of a substantial nature. A commodious new building is now under process of erection, to be completed September, 1896. The estimated cost is \$30,000.

The staff of teachers for 1896-97 will consist of three having the degree of M.D.V.S., one of D.V.S.B.S., and three M.D. The management is ambitious to make the Veterinary Department of the Detroit College of Medicine a high standard college, with requirements equal to any veterinary college in America.

AMERICAN VETERINARY COLLEGE.

THE Twenty-first Annual Commencement held at Chickering Hall, Wednesday evening, March 25th, marked an important epoch in the history of veterinary colleges by this school having obtained her majority. The hall was well filled, and those who listened to the very witty and entertaining address of Prof. J. W. Dowling, M.D., spent one of the most pleasant hours of their lives.

The first event of the evening was the conferring of degrees upon the following-named happy graduates: Clarence Linwood Adams, Danielson, Ct.; Alfred Frederick Bollinger, Brooklyn, N. Y.; John Sutherland Buckley, Mt.

Washington, Md.; Samuel Sutherland Buckley, B.Sc., Mt. Washington, Md.; George Cohen, New York, N. Y.; Cyrus Harvey Du Bois, New Platz, N. Y.; John Daly Gogerty, New York, N. Y.; Robert Walter Grutzman, B.Sc., Strasburg, Germany; Leland Delano Ives, Wallingford, Ct.; Edward Nathaniel Leavy, New York, N. Y.; August Frederick Lange, San Antonio, Texas; Thomas Jewett Lee, East Granby, Ct.; Michael Joseph Murphy, Jr., New York, N. Y.; George W. Mead, Jr., Brooklyn, N. Y.; Harrison Price Monk, Brooklyn, N. Y.; Percival King Nichols, Port Richmond, N. Y.; Herbert William Pratt, Rome, N. Y.; Henry Wilson Peter, Saegersville, Pa.; John Passmore Rauch, Memphis, Tenn.; John Goddard Richardson, Portland, Me.; William R. Rosekrans, New York, N. Y.; Christian Rothaug, Brooklyn, N. Y.; Charles Henry Tilton, Jr., Ashland, Mass.; Robert Clarkson Vail, Rahway, N. J.; Charles Robert Witte, New Britain, Ct.; Frederick Adolph Zucker, New York, N. Y.

Next in order was the awarding of prizes, which was accompanied by a few pleasant remarks by Prof. L. H. Friedburg, Ph.D. The prizes and recipients were as follows: Trustees' Gold Medal for the best general examination, awarded to John S. Buckley, Mt. Washington, Md. The Faculty Gold Medal, for the best practical examination, awarded to Frederick A. Zucker, New York, N. Y. The Alumni Association Prize, second best general examination, awarded to Samuel S. Buckley, B.Sc., Mt. Washington, Md. Prize for the best paper presented and defended at the College Association, awarded to Herbert W. Pratt, Rome, N. Y. The Junior Anatomy Prize, silver medal, awarded to A. J. Pistor. A well-worded valedictory was very admirably read by Edward N. Leavy, D.V.S.

The music was one of the prominent, pleasant features of the evening. A little later on the members of the Faculty, Alumni, and invited guests sat down to an elaborate banquet at Clark's, and after coffee and segars listened to toast responses. Dr. Herbert Lowe, of Paterson, was speaker of the evening.

The exercises were conspicuous by the absence of Prof. Liautard and the presence of Prof. James L. Robertson, Dr. Dougherty, of Baltimore; Drs. Simon J. J. Harger, of the Veterinary Department of the University of Pennsylvania; W. Horace Hoskins, of Philadelphia, the President of the United States Veterinary Association, and H. D. Gill, Dean of the New York College of Veterinary Surgeons.

NATIONAL VETERINARY COLLEGE.

THE fourth annual commencement exercises took place at the College Building, April 11th, at 8 P.M. Speeches were made by Profs. Salmon, Willets, and Lockwood. The first college prize was awarded to E. E. Seitz, of Pennsylvania. Honorable mention was made of J. W. Petty, of North Carolina; W. R. Jobson, of Pennsylvania; and B. E. Harper, of Washington, D. C. Reid R. Ashworth won the Junior prize for scholarship. The following gentlemen received the college degree, that of D.V.S.: P. A. Fisk, D.Sc., of New York; E. E. Graffam, of Washington, D. C.; R. H. Hadfield, of Washington, D. C.; B. E. Harper, of Washington, D. C.; J. M. Heagerty, of Maryland; W. R. Jobson, of Pennsylvania; C. H. Lockwood, of Washington, D. C.; J. W. Petty, of North Carolina; C. H. Morrison, of Connecticut; F. H. Schneider, of Pennsylvania; E. E. Seitz, of Pennsylvania; John Lockwood, D.V.S., of Washington, D. C.

SOCIETY PROCEEDINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THE April meeting was called to order on the evening of the 14th at 8.30 by Dr. Hart, with the following members present: Drs. Hart, Hoskins, H. P. Eves, Chas. Lintz, J. T. McAnulty, F. S. Allen, and W. L. Rhoads.

After a report of the work done by the State Board of Veterinary Examiners Dr. Hoskins, by request, made a report as one of the committee appointed by the Mayor for the selection of a consulting veterinary for the city's staff of meat and milk inspectors. Dr. Allen was then elected to membership by unanimous vote.

The question of society certificates was agitated, and, after a short discussion, Hoskins and Rhoads were appointed by the President a committee of two to report at the next meeting as to cost, etc.

Dr. Chas. Lintz, being the essayist for the evening, read a very interesting paper on "Pleurisy, Acute and Chronic," in which he spoke of several very interesting points on causes, symptoms, complications, sequelæ, and remedies ordinarily used; also those he had found most beneficial. In the first stage (which the practitioner seldom sees unless favorably near at hand) he advocates the use of mustard to the sides and sternum; also, R. Quinine, $\mathfrak{z}\text{iv}$; tereb. and acacia pulv., $\text{aa } \mathfrak{z}\text{vi}$ to $\mathfrak{z}\text{iss}$; ol. lini q. s. ft. $\mathfrak{f}\mathfrak{z}\text{xij}$. Sig. Give $\mathfrak{z}\text{j}$ at dose. In the second stage, do away with the mustard and alternate the tereb. with salicylate of soda, every two hours. After five or seven days, iodide of potassium. This paper aroused an earnest discussion, some advocating the use of most powerful heart-stimulants—nitro-glycerine and nux vomica—claiming digitalis was not to be relied upon.

Dr. Hoskins cited case of brown mare, eight years old (driver), weighing 1050 pounds, which at times appeared dull, and had a peculiar throwing of the head, profuse sweating, and at these times a slight incoördination of gait, due to cerebral anæmia, death having resulted from a very short and severe attack of pulmonary apoplexy, which diagnosis was corroborated on autopsy.

The meeting adjourned to reconvene May 12th.

THE May meeting was called to order at 8.30 on the evening of the 12th ult., by President John R. Hart, with the following members of the profession present: Drs. J. R. Hart, F. S. Allen, Charles Lintz, W. Horace Hoskins, H. A. Hackley, W. J. McClellan, and W. L. Rhoads.

Dr. Hoskins, as chairman of the committee appointed at a previous meeting to look up the question of cost, etc., of certificates, made a very favorable report, and, on motion of Dr. Lintz, the committee was instructed to procure a number of these certificates before the next meeting, as at that time a thorough revision of the membership list will be made, and certificates given to those who are at that time in good standing; those in arrears will, by motion of the Society, be expelled from membership, it being deemed advisable to make the separation at this time, as all delinquents have had

ample notice and full time in which to settle. The Society, though just ending a most prosperous year, feels that it is being handicapped with its inert members.

Dr. Hoskins, by request, made a report as a member of the State Board of Veterinary Examiners, stating that out of fourteen applicants but three were successful; he said that the examination papers throughout showed that a good primary education was very essential to those who would become veterinarians, and urged that a higher standard be made in the examinations of matriculants by the colleges, if they would at all times graduate men who would be an honor to their alma mater. The next examination will be held by the board June 15th to 16th, inclusive. After July 1, 1896, all applicants for examination must come from three-year schools, naming a number of colleges whose graduates would not be eligible to examination. He also gave Professors Brenton and McEachran, late of the Detroit Veterinary College great credit for their laudable efforts to procure for the students there a three-years' course.

It was moved and seconded that an order be drawn for the payment of rent for the current year.

Dr. Lintz now moved that we complete this, one of the most prosperous, enjoyable, and instructive years in the history of the Association, by a light lunch after our next meeting. This was seconded and unanimously agreed to. The watchword of the K.V.M.A. is live and let live.

The President then appointed Drs. Charles Lintz, F. S. Allen, and W. H. Hoskins, a committee to take this matter in charge.

Dr. Rhoads now read several articles from medical journals ridiculing the germ-theory of disease, and the much-talked-of occult science; this, especially the germ-theory, aroused quite an interest, and the adherents to the convictions of Pasteur were very strong in their belief.

The Society adjourned to reconvene June 9, 1896.

J. R. HART,
President.

W. L. RHOADS,
Secretary.

MICHIGAN STATE BOARD OF HEALTH.

A REGULAR meeting was held at Lansing, April 10, 1896. The meeting was called to order by the President, Hon. Frank Wells, of Lansing, and the following members were present: Prof. Delos Fall, Albion; Dr. Samuel G. Milner, Grand Rapids; Dr. George H. Granger, Bay City; Judge Aaron V. McAlvay, Manistee; and Secretary Henry B. Baker, of Lansing. The regular business of auditing of bills and accounts was transacted.

The Board voted to direct the Secretary to request health-officers from whom no annual reports had been received for the year 1895 to make such reports immediately, in accordance with State law, or proceedings would be commenced against such delinquent officers. Reports by the Attorney-General, Judge McAlvay, and the Secretary of the Board, who read a letter from Health-officer Duffield, showed that the report of the health-officer of Detroit is being made out and may be expected in a few days.

One of the most important and interesting subjects which came to the attention of the Board was in connection with a communication from Governor John T. Rich, which suggested that the State Board of Health

communicate with the proper official at each State institution in Michigan, especially the several asylums for the insane, calling attention to the prevalence of consumption in animals and in man, the danger of this disease being spread from animals to man by means of the milk-supply, and suggesting a plan whereby each institution could Pasteurize or in some way sterilize all the milk used. The Secretary mentioned that the subject of Pasteurization of milk was being taught at the Agricultural Experiment Station at Madison, Wis. If necessary, some person might be sent to this school for instruction who could return and teach the subject in this State. He mentioned that Mr. Grosvenor is said to be Pasteurizing milk for sale in Monroe, Michigan, and that a company in Northville has been thus preparing large quantities of milk for sale in Detroit. The Board directed the Secretary to send to the several State institutions communications which shall cover the Governor's suggestions for the sterilization of the milk-supply for the inmates of State institutions.

In connection with this subject, the Secretary read an item relative to a farmer who lost two head of cattle from tuberculosis. Later the disease developed in the farmer's family, consisting of six members, all of whom, together with two attendants, have since died with consumption.

The difficulties in the way of inducing the people generally to act on this subject are many, but the Board recognizes the fact that it is of very much greater importance that the milk-supplies of cities and villages shall be sterilized so as to be free from tuberculosis and typhoid-fever germs than it is to protect only the inmates of State institutions. The Board directed its Secretary to prepare for publication and general distribution a forcible statement of the facts and dangers from infected milk, and methods for the sterilization of the public and domestic milk-supplies.

The Board considered an informal invitation for a sanitary convention at Belding, Michigan. It was voted that the Secretary should correspond with parties in Belding stating that the Board would hold a sanitary convention, providing the citizens of that city would insure that every effort would be made to make the meeting a success.

It was also decided to hold another of the popular conferences of Michigan health-officers at Ann Arbor. The Secretary was requested to correspond with the director of the State Laboratory of Hygiene, at Ann Arbor, regarding the time that such a meeting could best be held.

The Secretary presented a complete report of the work of the office during the last quarter. The report showed that in consequence of new laws the work of the office was greater than formerly, but that it is being brought up to date; and the work required by the new school-law seems to be doing a great amount of good.

The Secretary made a special report upon the distribution of the Board's leaflets and pamphlets relative to communicable diseases, to school-teachers, county school commissioners, city school superintendents, and in a number of instances to pupils in high schools. This report showed that there are about 16,000 teachers in Michigan, and that about 20,000 sets of such publications had been sent out. This distribution of leaflets was in compliance with Act 146, laws of 1895, which requires the Board to supply data and statements bearing upon the modes of spreading and the best methods for the restriction and prevention of the dangerous communicable diseases, which subject is required to be taught in every public school in Michigan.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

THE annual meeting was called to order on Thursday, April 9th, by the President, Dr. J. W. Hawk, at Achtel Stetter's Hall, 844 Broad Street, Newark, N. J. Members present: Drs. J. C. Dustan, Morristown; William Gall, Matawan; Julius Gerth, Newark; J. W. Hawk, Newark; R. O. Hasbrouck, Passaic; L. P. Hurley, Hopewell; S. Lockwood, Woodbridge; W. Runge, Newark; and M. M. Stage, Dover. Visitors: Dr. W. H. Ridge, Trevese, President of the Pennsylvania State Veterinary Medical Association; H. B. Felton, Olney, and L. Lusson, Ardmore, Pa., delegates from the Pennsylvania State Association. Minutes of the last meeting were read by the Secretary, S. Lockwood.

A paper was read by Dr. L. P. Hurley on "Cerebro-spinal Meningitis," which was discussed by Drs. Dustan and Lusson.

Dr. W. Gall read a paper on "Indigestion and Dyspepsia in Horses."

A recent editorial in the *Newark News* on "Diminishing Cattle Exports," and referring to the embargo on American cattle, was discussed by Drs. Gerth, Runge, and Dustan, which led to a discussion on tuberculosis. Some of the members expressed themselves for and others against the use of tuberculin, but the majority in favor of it.

It was moved by Dr. Gerth that a committee be appointed to draw up resolutions expressing disapproval of foreign restrictions on cattle, and advocating retaliatory measures, which was not thought practicable by either Dr. Runge or Dr. Hawk, but all feeling that it was incumbent upon the Association to put itself on record as in favor of a more perfect control of the cattle industry, with a view to the extermination of contagious and infectious diseases, and that New Jersey ought to act with other States on this point.

Drs. R. C. Vail, of Rahway, and A. D. Edwards, of Atlantic Highlands, were elected members.

NEW YORK COUNTY VETERINARY MEDICAL ASSOCIATION.

THE regular meeting of this Association was called to order at the Academy of Medicine, on Tuesday evening, May 5th, by President Dr. Huidekoper, at 8.45 o'clock. On roll-call the following members responded: Drs. J. S. Cattanaach, J. S. Cattanaach, Jr., Delaney, Ellis, Ferster, Giffen, Gill, Huidekoper, Hanson, MacKellar, Meher, O'Shea, Robertson, Sherwood, and Turner (15). The minutes of the previous meeting were read and approved.

The Board of Censors having no business to report, and there being no papers, the time was given to discussion, which was opened by Dr. Robertson, who asked whether the Board of Health had a right to take possession of and destroy animals that show a reaction to the use of mallein, without any other outward signs of glanders? A general discussion followed on that point and on the symptoms of glanders in its various stages, and, finally, the following resolution was offered: "That the chair appoint a committee of three to communicate with the Boards of Health of the city of New York and the State of New York, and to investigate the value given by law to the inoculation of glanders by mallein, and the extent of authority of the Boards of Health in quarantining and condemning suspicious cases of glanders."

The chair thereupon appointed the following committee: James L. Robertson (Chairman), H. D. Gill, and Robert W. Ellis (Recorder).

Dr. Gill gave a few reports on the use of antitoxin in tetanus, with negative results. Dr. Hanson reported a case in which the symptoms became aggravated immediately after the injection of the antitoxin, which did not abate until relieved by death, which soon followed. Board of Censors, Dr. O'Shea, chairman, reported that our long-hoped-for Jury Bill failed to pass the Senate. He then read a list of names of men registered in New York County since October 1, 1875, followed by a report on the investigation made by the committee, on cards that were handed in at the last meeting, to the effect that none of the men to whom their attention had been called were registered, but that they had so far failed to get an interview with them. Moved and seconded that the report be accepted; carried.

Next in the order of business was the reading by the Secretary of the resignation of J. H. Ferster, V.S. The chair then asked the meeting their pleasure in the matter. Moved by Dr. Hanson and seconded by Dr. O'Shea that the matter be laid over until the next meeting. Amendment by Dr. Gill that it be acted upon at the present meeting. Vote on amendment lost. Vote on the motion carried.

Moved and seconded that a committee of three be appointed by the chair to draft resolutions for alteration of that section of the by-laws covering the night of meeting; carried. The following committee was appointed: H. D. Hanson (Chairman), J. S. Cattnach, and T. Delaney.

Moved and seconded that the Secretary be authorized to obtain a bill from the Chairman of the Judiciary Committee for expenses of that committee; carried. Dr. O'Shea then notified the chair that a committee from the Horseshoers' Association was outside, with the request that the V.M.A.N.Y.C. indorse their candidate for master horseshoer on the Horseshoers' Examining Board, Mr. O'Neil, and that the V.M.A.N.Y.C. appoint one of its members as candidate for Veterinary Examiner on said board.

Moved and seconded that the chair appoint a committee of three to recommend the name of Mr. O'Neil to the Governor as a member of the Horseshoers' Examining Board, and with the power to appoint a veterinarian. The following committee was appointed: Thomas Giffen (Chairman), H. D. Hanson, and F. W. Turner.

Moved, and seconded that the members of the V.M.A.N.Y.C. elect a veterinarian to the examining board at the present meeting; carried. Dr. Gill was unanimously elected.

Moved and seconded that the meeting adjourn; carried.

ROBERT W. ELLIS, D.V.S.,
Secretary.

NEW HAMPSHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting convened in the Eagle Hotel, Concord, Tuesday, May 5th, at 11 A.M., with Vice-President Dr. Hart in the chair.

Drs. Hart, Maguire, Lilico, Abbott, Wilkinson, and Pope answered to roll-call. The following officers were elected by ballot for the ensuing year: President, T. G. Lilico, M.R.C.V.S.; Vice-President, F. C. Wilkinson, D.V.S.; Secretary and Treasurer, L. Pope, Jr., M.D.V.

Following the election of officers, discussion ensued over the action taken

by Dr. Geo. Bailey, of the Maine Cattle Commission, against New Hampshire veterinarians.

The Secretary was instructed to notify the Massachusetts Cattle Commission of non-qualified men making tests with tuberculin now acceptable to that Board.

A paper was read by Dr. Abbott on "Homœopathy in Veterinary Medicine," which was most excellent in its preparation and delivery. Discussion following showed a strong feeling against the new school.

The meeting adjourned at 1 P.M. until September meeting.

The reports of Secretary and Treasurer were read and accepted.

L. POPE, JR., M.D.V.,
Secretary.

MISSOURI VALLEY VETERINARY ASSOCIATION.

THE second annual meeting of the Association will be held in Leavenworth, Kansas, Wednesday, June 10, 1896. The meeting will convene at the National Hotel, at 7.30 P.M. Papers will be read by Dr. U. B. McCurdy, Topeka, Kansas, "Tuberculosis;" Dr. N. S. Mayo, Manhattan, Kansas, "Cornstalk Disease;" Dr. R. C. Moore, Kansas City, Mo., "Castration of Ridglings;" Dr. G. C. Pritchard, Topeka, Kansas, "Control of Contagious Diseases in Animals;" Dr. J. O. Young, Concordia, Kansas, "What is Required to Practise Veterinary Science Successfully;" Dr. C. B. McClellan, Lawrence, Kansas (subject not given); Dr. E. H. Biart, Lansing, Kansas, "Preventive Inoculation for Contagious Pleuro-pneumonia."

Election of officers for the ensuing year will also take place, and from present indications we will have a large turnout and a good meeting. Come early and stay late.

S. L. HUNTER, V.S.,
Secretary.

IMPORTANT MEETINGS IN JUNE.

THE Keystone Veterinary Medical Association of Philadelphia and vicinity will close its most successful series of meetings for years with the gathering on June 9th, at 8 P.M., Broad and Filbert Streets, third floor. A full meeting is earnestly requested. Invitations have been issued to several prominent members of the profession outside of the State. A luncheon will be spread after the close of the regular order of business, which will be shortened on this occasion. This Association announces the adoption of a certificate of membership, and will resume its meetings in September next under the brightest prospects for a number of years. President Hart and Secretary Rhoads are extremely anxious that every member shall be present on June 9th.

THE annual meeting of the Schuylkill Valley Veterinary Medical Association will be held at Hotel Woll, Pottsville, Pa., on Wednesday, June 17th, at 11 A.M. Matters of importance relating to the profession will be discussed. Some interesting papers are promised by Drs. Bieber, "Mange;" Moyer, "Castration;" Faughnan, "Tetanus;" Sallade, "The Social Position of the Veterinarian;" Noack, "Emphysema."

Applications for membership should be addressed to the Secretary.

By order of the President.

OTTO NOACK,
Secretary.

PROCEEDINGS FOR THE YEAR 1894-95 OF THE SOCIETY FOR THE STUDY OF COMPARATIVE PSYCHOLOGY IN CONNECTION WITH THE FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE OF MCGILL UNIVERSITY, MONTREAL.

(Concluded from page 418.)

During the discussion which followed the President compared the mental development of whites and negroes in one of the Bahama islands which he visited several years ago. The children attended the same schools, and thus under similar environment it was found that up to a certain age the negro children proved the more apt scholars, but that age being passed, they soon fell behind their fairer schoolmates. This precocity of mental development followed by early arrest has been observed and commented upon by those who have undertaken the education of the negro—there is great aptitude in the beginning, but inability to go on to original thinking. In reply to a question from Mr. MacNider, he also stated that, in some respects at least, the negro matured physically at an earlier age than the Caucasian. Mr. Zink, in referring to the subject of the paper, said that the relation between æstheticism and religion was greater than might at first appear, and was a matter worthy of thought and investigation.

The President then read a report of the recent meeting of the American Psychological Society, held at Princeton, at which he was present and read a paper on "The Psychic Development of Young Animals and Its Physical Correlation."

This meeting was well attended, the papers presented covering a wide range of psychological topics. Many of the subjects were treated from the comparative point of view, which is, indeed, the true method. Prof. Jastrow has said, "in proportion to our knowledge of the earlier, simpler, and lower forms of intelligence will be our ability to appreciate and utilize the best and worthiest faculties in ourselves."

After the reading of the minutes of the previous meeting, "Our Duty to the Lower Animals," the subject of a paper by Mr. S. L. Cleaves, was treated in a thoroughly original manner. The claim of animals to the kind consideration of man, who frequently misjudged their actions, was referred to at length. The cruelties to which horses are subjected in conformity to the dictates of fashion, such as docking, the use of tight check-reins, and powerful curb-bits, are matters about which owners are in many cases very careless, and many of the abuses inflicted on cab horses could be prevented by the public, who are singularly thoughtless in this respect. Referring to the increasing humane treatment of animals, the writer expressed the hope that the next few years would witness a still greater advance. The veterinarian, in the practice of his profession, can do much in the way of awakening and fostering a sentiment of kindness to the domestic animals. In conclusion he referred to the growth of this Society under the able direction of the President, and congratulated the members on the work it has done since its inauguration.

Mr. J. C. Cutting read a paper on "Expression in Animals," describing

at length the various methods made use of in the communication of thought. These modes of expression have been developed largely as a result of the relations existing between the lower animals and man. The expression by countenance is not so marked as in man, yet there are many indications by which we can discern the condition of the mind not only in the normal, but also in the abnormal states. It has been stated that different facial expressions in man are effected by impulses along different fibres of the facial nerve. Spencer says: "When any quantity of nerve force is produced and we have a state of feeling, it must expend itself somewhere. As when the cerebro-spinal system is excited, the nerve force expends itself in sensations, active thought, or movements, and, if undirected, will take the most habitual route, and the facial muscles come into play." Gestures are closely related to attitude and posture, each of which is indicative of the mental state of the animal. This is especially noticed in birds and carnivora, in which we see erection of the dermal appendages when angry or frightened. The mobile ears of the horse are organs of expression, a fact apparent to anyone who takes but even a passing interest in this animal. Articulate sounds as a means of communication constitute a later form of expression, from an evolutionary point of view, the other forms being more primitive in nature.

Mr. H. D. Clarke followed with a paper on "Bovine Intelligence." First comparing the brain of the ox with that of a man, he proceeded to show the relation existing between the intelligence of the animal and its environment. The most intelligent cattle are found among the smaller breeds, the Jerseys and Devons. An instance was related of a cow, which appeared to have an idea of the time of day and also understood a command. On one occasion when going out through the wrong door she was told "The other door, Molly," and turning immediately went out by the right one. It was believed that, while she did not comprehend the meaning of the words, she interpreted them as a correction for what she was about to do, and turned to the other door. The instinctive feigning of calves was referred to and the development of intelligence described. The paper was concluded by the statement that cattle are more intelligent than is generally supposed by those who are not brought into close relations with them.

During the discussions which followed the reading of these papers the question as to whether fox-hunting is a cruel pastime or not, and whether it should be followed by the true sportsman, was dealt with. No conclusions were formulated by the members, and the President advised a reconsideration of the question at some future meeting.

After the reading of the minutes of the previous meeting, Mr. B. K. Baldwin presented a paper on "The Relations Between the Intellectual Status of the Owner and the Horse." The writer endeavored to solve the problem: "Why, among men, do those of medium psychic development possess animals of more intelligence than do those of acknowledged culture?" The Arabs possess the most docile animals known, and looking at these animals one may contemplate the value of kindness. The transportation of the Arabian horse from his native soil to this country is attended by a complete change of environment. Coldness or brutality, however, cannot banish entirely the spirit which kindness has fostered, but the quietude of content is replaced by timidity, and confidence in his master is destroyed. This change in disposition is a reflection on our boasted civilization. Re-

ferring to methods of training adopted by Mr. Gleason, the writer stated that the lessons of the trainer were not attended by more lasting benefit, because the animals, in many cases, were returned to the same environment which had induced the undesirable habits. The conclusion arrived at by the essayist was "that the Arab, with limited psychical development, places the horse on an equal footing with himself, whereas more civilized man considers himself so far above the animal that the latter's opportunity for psychical development is reduced to a minimum."

Mr. C. A. Boutelle read an instructive paper on "Habit." In the newly-born animal we see many complex movements, some of which are termed automatic activities; others are of reflex nature, and some partake of the nature of both. Some are instinctive, others are rapidly acquired, and then performed with little or no attention, constituting habit, a definition of which involves the fundamental principles of matter. Instincts vary in the individual to adapt themselves to the exigencies of the case. Nerve tissue is endowed with an extraordinary degree of plasticity, so that it may be asserted that "the phenomena of habit in the animal are due to the plasticity of the material of which it is composed." The impressions of outer objects fashion for themselves appropriate paths. Nature has so surrounded the brain about that the only impressions that can be made upon it are through the blood or sensory nerve-roots, and it is to the attenuated currents passing through the latter that the cortex is particularly susceptible. The brain may be considered as an organ through which the currents from the sense organs make with extreme facility paths which do not easily disappear. It must be borne in mind that the incessant nutritive renovation tends to corroborate and fix the modifications in the tissue. Habit, then, simplifies our movements and diminishes the conscious attention with which they are performed. An event calls up its own appropriate successor and without any reference to the conscious will until the whole chain of events necessary for the action are accomplished as if fused into a continuous string, and only requiring the first stimulus. A strictly voluntary act is guided by idea, perception and volition; in habitual action mere sensation is a sufficient guide. The moral aspect of habit was briefly outlined, and reference made to the advantage derived from early developing good habits in man and the lower animals.

Mr. Harri Dell read a paper on the "Evolution of Language." There are indications by which we can approximate the length of time a given faculty has existed in the race, and in following these indications we must admit that language has long been made use of by man. It appears early as a means of expression in the child, is universal, and is not readily lost in sickness. When, however, aphasia is seen we find that the latest acquisitions in language are, in conformity to a psychological law, the first to be parted with, and the primitive gesture-language is retained to the last, and these varied manifestations of this disease aid us in tracing the development of the faculty. There was a period in the early history of the race when speech was unknown, or consisted of but a few imitative sounds, the individual depending on gestures as a means of communication. But means increasing mental development required other means of expression than gestures, and articulate sounds were used more and more until the primitive gesture-language became subservient to speech. Primitive speech was in a large measure composed of words of onomatopœic origin. A similar condition is found in the speech of savages of the present day, and, indeed,

many of these reduplicative words are retained in our own language. With developing passions and emotions came the birth and rise of poetry as a means of expression. Poetry was used to perpetuate the deeds of war and the chase, by being handed down from one generation to the next, long before the introduction of writing. For the use of articulate speech a cerebral centre is indispensable, also vocal and auditory organs. In many of the lower animals the two latter are found more perfectly developed than in man, but the cortical centre is rudimentary or entirely absent, as shown by the experiments of Ferrier. Thus we see in the lower animals gestures predominating over vocalization, which was probably the condition of the primitive language of man.

A brief discussion followed the reading of the papers, after which the President congratulated the members on the marked development of the Society during the present session, the superiority of the papers, from a literary and scientific standpoint, over those of preceding years, and the valuable acquisitions to the Library.

Lines of work for the next session were suggested and the need of original investigation and experiment pointed out.

MANITOBA VETERINARY MEDICAL ASSOCIATION.

(Concluded from page 158.)

REMARKS OF DR. R. PRICE, OF ST. PAUL, MINN., AND DR. RUTHERFORD, OF PORTAGE LA PRAIRIE, ON THE SUBJECT OF "TUBERCULOSIS," AT THE MEETING HELD DECEMBER 17, 1895.

Dr. Price: I came here entirely unprepared to meet you or say anything on veterinary matters, but am very glad to have met so many practitioners holding positions of honor and filling them with ability. It was a surprise to learn that your city has provision for inspection of dairy herds and testing them for tuberculosis, and that it is being so thoroughly carried out by Dr. Hinman, who has been appointed to the position of City Veterinary Inspector. When we know that the disease is a very ancient one, and was recognized in both mankind and cattle for centuries, it is a wonder, to all progressive men, that no stringent methods have been previously adopted for its suppression. In the slaughter-houses of the city of St. Paul I have watched with interest the method adopted by the Jews for slaughtering, which dates back to Moses. Examination is made, previous to the removal of the lungs, for any adhesion between costal and visceral pleuræ. Should there be even a slight band joining them, the same is carefully cut, the lungs removed, their surface examined for any pleural detachment; the lungs are next inflated by an assistant, when should any air escape from the lungs and appear under the pleura the carcass is condemned and sold to the Christians in places where there is no meat or live-stock inspection, showing that the danger to the Jewish race from consumption of such flesh has long been recognized. The Jews, however, pass "lumpy jaw" and tabes mesenterica, apparently not recognizing either disease. When we see that mortality tables acknowledge a death-rate of one in every seven from phthisis, we realize how prevalent the disease is, yet people have become so accustomed to hearing said, "died from consumption," that it produces no

sense of fear, whereas were it smallpox or cholera that occasioned so many deaths the greatest excitement would prevail and every effort be put forth to suppress the disease. It is like the natives of Mecca, Arabia, where cholera exists endemically; they pay little attention to it and make no effort to suppress the malady. Yet we, who are better educated and supposed to be more intelligent, treat tuberculosis like they do cholera. We say, "It is the will of God," and so let it go. I for one do not believe it is, but that we are endowed with intelligence, and that we should use it to overcome these obstacles to life and health.

In the city of New York the percentage of cattle affected ran as high as 98, the lowest being 5. Is it a wonder that infants whose principal diet is cow's milk should suffer from bowel troubles, with a large mortality therefrom. In the State of New York, out of 20,000 cattle tested, $3\frac{1}{2}$ per cent. reacted to the tuberculin injections. These tables show that where animals are crowded together in an impure atmosphere, with poor ventilation, the disease spreads most rapidly. Experiments in Germany by the most eminent pathologists have proved that the bacilli are not destroyed by the gastric juice; and the late Royal Commission appointed to investigate the disease in England reports that cooking is not always sure to kill them; that large joints are not penetrated sufficiently by the heat; and that their centres contained living germs of tuberculosis. It is now universally admitted by all prominent authorities that milk may contain the bacilli, even when the udder is not affected, and that such is dangerous to mankind. Even the knives used in butchering or cutting up raw meat will convey the germs of tubercle from a diseased to a healthy piece.

In making our autopsies insufficient time and care are taken in carrying them out fully, often resulting in failure to find lesions, except when of an extensive character, and animals are pronounced healthy. Whereas, if carefully conducted, numerous glands would be found containing tubercles, and even the lungs may have small ones after being passed over as sound. At the Minnesota State experiment farm Dr. Reynolds, who has charge of the Veterinary Department, is conducting a series of experiments on cattle, rabbits, and rats. He selected eight head of grade cattle that had reacted to tuberculin, and at regular intervals repeated the test. He found that after a time reaction ceased. As he will himself report fully the results of these experiments, I will now merely refer to them. At post-mortems held on some of the cows, a couple showed very extensive pleural and lung changes, others only slight ones. Whereas one that had given a decided reaction was apparently free from evidences of tuberculosis, yet on making a more careful search a caseous nodule was found in one lung, and a bronchial and tracheal gland contained undoubted evidences of the disease, which microscopical examination confirmed.

As to the use of such flesh for human food in this country, where meat is plentiful and cheap, there is no necessity for taking chances; and all diseased animals or carcasses should be condemned and rendered, no matter how slight the lesion is. No progressive pathologist who has any respect for his reputation will state that an animal can be affected with a contagious disease and the flesh be perfectly healthy. Who can positively state the extent to which the germs are disseminated throughout the system, and how much toxin the flesh contains? As cooking has no effect on these

toxins, which are poisons, their ingestion cannot under any condition be healthful.

The sooner the disease is stamped out and all fresh arrivals carefully examined and tested, the smaller the loss will be to the Province. We all know with what fearful rapidity it spreads under favorable conditions in herds when even a single diseased beast is introduced into it, and the terrible losses it entails to the owner. I look forward with extreme interest to the results of your present effort to eradicate tuberculosis from the dairy herds, and feel certain that when this is done the mortality among our little ones will be enormously reduced, as well as the general health of the community improved.

Dr. Rutherford, of Portage la Prairie, followed. He said that it was unfortunate that so few people appeared to realize the danger to human life arising from the use of the meat and milk of animals suffering from tuberculosis. It was still more unfortunate that there were to be found in the ranks of both the medical and the veterinary professions men who, either from ignorance of the subject or from a desire to allay the fears of the public, were placing themselves on record as opposed to the thorough inspection of dairies and slaughter-houses. That a very grave danger existed in the use of the milk from tuberculous cows and the meat of animals suffering from generalized tuberculosis was surely patent to anyone who took an interest in the subject. That at least twelve per cent. of the deaths from all causes in civilized countries were due to tuberculosis appeared to be conceded on all hands; and when, in connection with this, it was admitted that heredity played a very unimportant part in the propagation of the malady, the very pertinent query as to where and from what sources the disease was acquired by its numerous victims at once suggested itself. The only possible answer was that it spread by contagion, and if, as was admitted, the bacillus was the germ of that contagion, and the bacillus was found in the milk of affected cows and in the lymphatic glands of their bodies, it was difficult to discover the foundation upon which the opponents of the rigid inspection of these articles of diet based their theories. That young children, with their delicate mucous membranes and often imperfect or abused digestion, were the greatest sufferers there was no doubt, but no one was safe from the inroads of this insidious and much-protected malady. The speaker mentioned several instances which had come under his own observation, where there appeared to be no possibility of doubt that the disease had been contracted by children who were consuming milk from affected cows. There was also the often-contested but nevertheless demonstrable fact that in countries where the milk and meat of cows were not articles of food the disease was practically unknown. Many careful experiments had proved beyond a shadow of doubt that the milk and meat of consumptive cows communicated the disease readily to the smaller animals, and if to them, why not to susceptible human subjects? That many men drank milk and ate beef and remained healthy proved nothing. They might be healthy, and they might not. Often the best-looking cow in the herd reacted most violently to the tuberculin test, and the autopsy revealed the presence of the disease. There was no doubt that the same conditions prevailed in regard to the human race, and that many of the healthiest-looking men and women had tubercular lesions localized in their systems, lying in wait for favorable conditions to bring about their development.

That this was really the case was proved by the fact that autopsies conducted on the bodies of suicides and of people who had died from accidents frequently revealed extensive tubercular lesions previously entirely unsuspected. If autopsies were as common in the human subject as they were in cows and oxen, this statement would be even more strongly borne out. The speaker had given the matter a considerable amount of study from the standpoint of legislation, but it was difficult to evolve a satisfactory solution of the question as a whole. Of one thing there could be no doubt, however, viz., that the city of Winnipeg or any other city or town, was perfectly justified in saying to the dairymen, "You shall not give to us or to our children milk from consumptive cows," and to the butchers, "You shall furnish us with meat from healthy animals." He had been criticised somewhat freely by some citizens for the advice which he had given to the Health Committee when asked for an opinion last winter. He had then advised a thorough inspection of all the cows in the dairies, the immediate condemnation and slaughter for rendering, cremation, or burial of those affected with generalized tuberculosis, and the purchase by the city authorities of all which reacted to the tuberculin test. These last, he suggested, should be taken to the country, fattened, and slaughtered under strict veterinary supervision; those in which only trifling and localized lesions were found to be utilized for beef, and those badly affected to be destroyed. Some gentlemen were horrified at the idea of a reputably sensible veterinary surgeon suggesting that the meat of these cows should be utilized, but he had asked them quietly what became of the mortal remains of these animals now; was there some peaceful bovine cemetery on the outskirts of the city where poor, consumptive Crummy was laid to rest, or did they eat her now without the safeguard of the veterinary supervision? No reply to this pointed query was vouchsafed. Dairy cows especially, after having been closely housed and heavily milked, were much more likely to be affected than younger cattle getting more exercise and plenty of fresh air, and he thought that but a small percentage of the ordinary cattle throughout the Province were diseased. They had found in Paris and elsewhere that it was safest to keep the milch-cows in the city dairies for one year only, bringing in fresh and young cows each season, and when one compared the usual ventilation of the average winter cow stable with the amount of fresh air which ought to be supplied, the wisdom of following such a course became apparent. He was a firm believer in the tuberculin test; the number of so-called failures was very small, and there was little doubt that in many of these the characteristic lesions were overlooked. Family cows should all be tested. His own cow was tested, but he observed that the children in his house still had their milk boiled, the result of leaving veterinary periodicals lying round. Mr. McFadyean, he noticed, gave his children boiled milk, and he was a great admirer of Mr. McFadyean. He believed that when circumstances prevented a man going to the front himself, when his capabilities or his opportunities were inadequate for personal scientific investigation, it was a good thing to do as those not in the first flight did in the hunting-field—pick out a good, safe man for a lead, and follow him. Now, in this question of tuberculosis there was no lack of good men to follow. Koch, Nocard, Bang, Crookshank, McCall, McFadyean, and McQueen were all leading the way and sounding the alarm for the members of both branches of the medical profession to fall in and fight the common enemy. The few men who had

not as yet seen their way clearly to join in the fray on the right side were likely to find themselves without a leader at all. For his part, he was satisfied with the opinions of such men as those mentioned; they were good enough authorities for him. He trusted that the profession in Manitoba would be a unit on this question, and that when legislation was introduced it would, if in accordance with the undoubted results of scientific and practical investigation, meet with the hearty support of the members of the Association.

PERSONAL.

Prof. A. Smith, of Toronto, takes an active interest in the Canadian Jockey Clubs, and fills a place on the executive committee for the present year.

Veterinarians Thomas Hodgson and W. W. Stewart filled the professional positions at the recent horse-show in Toronto, Canada.

Dr. J. C. McNeil, of Pittsburg, has been appointed deputy inspector for the Western District of Pennsylvania to represent the State Veterinary Sanitary Board, owing to the prevalence of bovine tuberculosis reported from that district.

Dr. J. S. Butler, of Minneapolis, lectured before the master horseshoers during the month of April.

Dr. D. P. Yonkerman lectured to the master shoers of Kalamazoo, Michigan, during the month of March.

The Pittsburg *Blue-book* contains the name of but one veterinarian.

Dr. A. H. Baker, of Chicago, is on a pleasure-jault for a period of two weeks through the sunny South.

The selection of Dr. S. Stewart as dean of the Kansas City Veterinary College, to succeed Dr. Wattles, fully assures the maintenance of the highest purposes of a thorough veterinary education in that school.

Dr. H. Walters, of Wilkesbarre, will conduct the examinations and supervision of the dairies and herds of cattle from which the Hygienic Milk Co., of the above city, will obtain their milk-supply.

Dr. A. B. Campbell has just been appointed milk-inspector for Berlin, Ontario.

Dr. John W. Adams, Professor of Veterinary Surgery and Obstetrics at the Veterinary Department of the University of Pennsylvania, has been appointed consulting veterinarian to the Department of Public Safety in Philadelphia. This is a well-merited appointment, and will reflect the highest credit upon the profession, and give to our city services of a highly valuable character.

Governor Drake, of Iowa, has appointed the following Assistant State Veterinarians in the several counties: S. H. Kingery, Union; R. R. Hammond, Mahaska; J. D. Inger, Bremer; J. H. McLeod, Lloyd; H. A. Fee, Blackhawk; W. H. Austin, Jasper; S. H. Johnson, Carroll; J. W. Scott, Delaware; J. A. Simcoke, J. W. Griffith, Lynn; P. O. Koto, Winnebago; William Benjamin, G. A. Johnson, Woodbury; H. Shipley, O'Brien, E. E. Sayers, Kossuth; and R. G. Rich, Fayette.

Dr. H. D. Hanson, of New York City, has been on a flying trip to St. Louis for rest and recreation.

The *Buffalo Horse World* reports the death of Dr. Hy. Kugler, of Port Chester, N. Y., from glanders contracted while handling an affected horse.

Dr. I. N. Krowl, formerly of Passaic, N. J., is now a resident of Jeffersonville, N. Y.

The Veterinary Department of Cornell University will have a strong faculty to offer to their future students. The New York State Legislature appropriated \$25,000 for the first year.

The Ohio State University at Columbus, Ohio, will have in their new agricultural building, among many other facilities, a Pasteurizing room: a room where judging of cattle will be taught.

The many friends of Prof. R. S. Huidekoper will be glad to learn of his continued progress toward restored health and wish for him a prolonged period of rest that will enable him to again resume in the fall the many important positions he has occupied as a teacher the past two years.

Veterinarian G. Howard Davison, of Millbrook, N. Y., is quite an enthusiastic breeder of sheep. He sailed for England in May for the purpose of making some fresh purchases.

GLEANINGS.

A threatened reopening of an old case of fistulous withers was successfully averted by large doses of salicylate of soda and iodide of potash, given in hot bran-mashes, with a denial of all grain. Externally the use of Dick's white lotion applied three times daily. The use of strong caustics, escharotics, or other destructive agents in fresh cases of fistulous withers often does a great deal of harm and destroys a large amount of tissue which requires a long time to restore. Cleanliness and dry dressings, with the openings well covered with a pad of oakum and a clean cloth, will oftentimes insure a prompt and thorough recovery.

Paralysis of the glottis was recently met in a bitch two weeks after whelping. Death ensuing, a post-mortem revealed a complete breaking-down of the uterus and horns, and either the absorption of septic matter or reflex disturbance was looked upon as the causative factor of the paralysis. One of the puppies presented a septic condition of several of the toes, with a deep sloughing of the parts affected, which was the only noticeable abnormal condition of mother or offspring from the time of whelping to the development of the loss of power in deglutition of the mother.

THE Department of Agriculture is out in a circular (No. 8) calling the attention of our stockraisers and producers of animal food-products to the great market that centres at Manchester, England. An interesting description of the completion by the Manchester corporation of one of the largest plants for the reception of live animals, their suitable maintenance for a period, the most improved abattoirs, and cold-storage facilities of unsurpassed completeness, all located adjacent to the great Manchester ship-canal, and opening up to trade a field of consumers numbering 7,500,000 people.

ALL ABOUT THE DOG. Seventeen species of wild dogs are known. The most famous dog-artist was Landseer. The native wild dog of Australia is called dingo. The Laplanders called the bear "the dog of God." The "dogs of war" are famine, sword, and fire. The mastiff is believed to be in-

digenous to Thibet. A dog is fully grown at the end of his second year. The dog is mentioned thirty-three times in the Bible. Cerebus was the famous "three-headed dog of hell." The temperature of the dog's blood is 102° Fahrenheit. Irish and Danish hounds are the largest dogs of Europe. The lyacon of the Cape of Good Hope is a native mastiff. In 1876 there were licensed in Great Britain 1,362,176 dogs. The dogs of Orion were named Arctophomus and Pto-phagus. In Siberia the Russian greyhound is used for tracking fugitives. The greyhound appears on the oldest Egyptian monuments. In Ireland there are four packs of stag-hounds with 100 couples. The famous Cuban bloodhounds are descendants of the mastiff. Only domesticated dogs bark; in the wild state they howl or whine. The pariah curs of India are the direct descendants of wild dogs. The fossil remains of four different types of dogs have been found. There are 20,000 hounds in Great Britain used for hunting purposes. The Esquimaux dog is found in Siberia, as well as in North America. All Arctic dogs are provided with a thick mat of wool under their hair. There are over 600 proverbs in the English language relating to dogs. Shepherd dogs used in caring for sheep are not taxed in Great Britain. Diogenes was called "the dog" on account of his habitual crustiness. The mastiff was known to the Greeks in the time of Alexander the Great. The pupil of the dog's eye, like that of the other diurnal carnivora, is round. Mulhall computes that there are at present 2,000,000 dogs in Great Britain.—*St. Louis Globe-Democrat*. A Newfoundland dog prevented an eagle from carrying away the baby of William Sloane, in Knott County, Ky.—*Philadelphia Evening Bulletin*.

Frank Shaw, President of the New York State Tuberculosis Commission, is authority for the statement that no tuberculosis exists among the cattle of the Isle of Jersey, and that the records of the Commission's work show that there are more tuberculous cattle in other breeds than in Jerseys.

In very young dogs and those cases where they have become anæmic from faulty feeding, and where one suspects the existence of worms, the syrup of iodide of iron is a useful mixture, given in fifteen to thirty minim doses. Where diarrhœa exists the addition of paragoric aids in correcting the trouble.

NEW INVENTIONS.

An animal-poke, consisting of a wooden yoke adjusted to the neck, and to which is jointed a bar with projections; the bar extending to the knee and fastened in a loop attached to a strap secured to the forearm just above the knee.

An arrangement worked by a handle adjacent to the seat of the driver by which in the event of a runaway or accident the horse and shafts may be freed from the vehicle, and by the same lever the latter guided to a standstill.

A wedge-shaped snap-hook for fastening rein, containing a bolt which is held in place by a spring.

A hitching device, consisting of a pedal pendant from the body of the wagon, and so arranged as to grasp the ground or earth, and a hitching-rein carried from this device to the ring of the bridle.

A removable horseshoe-calk, consisting of a threaded spur fastened in threaded openings of the shoes, and secured by a washer.

A horseshoe with a U-shaped channel on its under side, and so arranged by a fastening device to have placed a spike or flat-shaped calkings.

A device for stopping runaway horses, consisting of a strap running down the median line of the face, and dividing in two branches just above the nostrils, with a piece of elastic material and a pad to each branch, and a special rein attached to each strap by which pressure on the nostrils and their openings may be made when desired.

An animal-poke, consisting of a yoke and spiral wire extensions at the top and sides.

A nailless horseshoe, consisting of a band raised above the shoe and destined to grasp the hoof and be drawn tight by screws through the ends of the rings of the shoe and fastened to the bands.

A horseshoe with a downwardly extended flange, and spikes extending inwardly from flange to secure a pad within said flange.

A cow-stable appliance, consisting of a pan hung from the ceiling and adjusted with ropes and pulleys and secured to the rear of the cow by straps attached to surcingle and made movable as the cows rise or lie, said pan destined to catch the droppings from the animals.

A rein-holder to be fastened to the dashboard, and a latch arrangement to secure the reins.

A nailless horseshoe, consisting of two parts or halves with an upwardly and inwardly extending flange, destined to engage the outer wall of the hoof, and an inwardly and upwardly extending flange to rest against the concave surface of the sole, pivotally joined at the toe, and with a bolt or screw with lug attachments for regulating adjustment at heels.

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Why the special report on diseases of the horse, issued by the Department of Agriculture during the term of Secretary Rusk, is now being hawked about by the second-hand book-stores of the country at the price of one dollar per copy?

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CRYPTORCHIDS AND THEIR CASTRATION.¹

BY R. C. MOORE, V.S.,
KANSAS CITY, MO.

THE word cryptorchidism is applied to that condition in animal life where one or both of the testicles fail to descend into the scrotum. Its Latin roots signify "I conceal," and "a testicle," and might be translated a hidden testicle. In this country the words "ridgling" and "original" are frequently applied to animals presenting this condition. Webster defines the words ridgling and original, in respect to this subject, to mean a half-castrated animal, a sheep having only one testicle, a barrow hog, a half-castrated cock. So if we are to confine ourselves strictly to Webster's idea of the meaning of these words we should not apply them to the abnormal condition under discussion, as it is not necessary that an animal be half-castrated to have a hidden testicle. As custom largely governs the meaning of a word, regardless of Webster, we will not be considered greatly wrong if we apply the word ridgling to an animal having one or both testicles concealed, "not in the scrotum," for in this country it has been used to convey this idea for many years.

All male animals are subject to this abnormal condition, and I have found it to exist in the horse, ox, and hog, but so far have never met with it in the ass, mule, or dog. In this country but few asses are castrated, and the chances of finding this condition are greatly reduced. The mule is generally free from abnormal conditions, hardy, and tough, which may in a degree account for the seeming scarcity of cryptorchids among these hybrids.

¹ Read at the June meeting of the Missouri Valley Veterinary Association.

The infrequency of castration of the dog may account for my not having met with it in the canine race.

It is generally considered that cryptorchidism produces a marked unfavorable impression upon animals. In the horse, at least, this idea is certainly well founded in many cases. If there is a disagreeable, unpleasant, ill-tempered, devilish animal, it is certainly a mean ridgling horse. In other cases horses retain one or both testicles concealed until a good old age without developing a bad disposition, not worse than any entire horse. However, I believe this to be the exception, not the rule.

Cryptorchids may be divided into four classes: First, external inguinal; second, high or internal inguinal; third, abdominal; and fourth, infrascrotal.

The first is simply a short cord, drawing the testicle up to or into the external inguinal ring, and it is doubtful if they may be classed as ridglings, for the testicle is not hidden to a careful and experienced observer.

In the second class, the high, or internal inguinal, the testicle is hidden in the canal, or engaged within the internal inguinal or abdominal ring, or the testicle may lie on the inside of the abdomen with the epididymis or a loop of the spermatic cord extending down through the ring. In either of these conditions the tunica vaginalis, or vaginal sheath, is formed and occupying the inguinal canal, and is occupied by the testicles and cord, or so much of them as may have descended through the ring. If no part of the testicle or cord have entered the internal inguinal ring, then no vaginal sheath has been formed.

In the third class, abdominal cryptorchids, the testicle floats in the abdominal cavity, suspended by the testicular ligament, which is formed by a fold of peritoneum, dipping down from the antero-inferior face of the ileum, encircling the spermatic cord and vessels, and reflected over the epididymis and testicle. The parietal attachment of this fold extends from the margin of the internal or abdominal ring upward and forward for some distance and allows the testicle to float in the posterior part of the abdominal and anterior part of the pelvic cavities.

The fourth class, or infrascrotal, is one that so far I have failed to find described in veterinary literature, and yet one that is quite common in bovines. The testicle, after passing down through the inguinal ring and canal into the vaginal sheath, fails to press the dartos and skin down to form the scrotum. Instead of lodging here it passes forward along the course of the penis

between the skin and abdominal tunic, sometimes reaching nearly to the end of the penis. This is doubtless due to the arrangement of the dartos, which is continuous with the superficial layer of the aponeurotic sheath of the penis of bovines (Chauveau's *Anatomy*, page 978).

It is sometimes important to decide whether or not a horse is a cryptorchid, and frequently it is a very difficult task. If a true history could always be obtained, it would be a very easy matter; but, alas! this is seldom the case and often impossible. The veterinarian is often left in doubt as to the truth. If we can be assured that the horse has never been castrated, and one or both testicles are missing from the scrotum, and their presence in the inguinal region cannot be detected by a careful inspection of that region, then we are safe in saying that the horse has a hidden testicle. If no history is obtainable, and the horse exhibits the usual signs of the stallion in appearance, build, action, and particularly in the voice, and no testicle is visible, we may reasonably conclude that he is a ridgling. Cicatrices on one or both sides of the scrotum is not evidence that the horse has been completely castrated, for many castrators attempt the operation and fail. Many geldings will tease a mare, and some will copulate; but the act is short and imperfect and easily detected as abnormal, and the voice will not have the coarse, husky tone of the stallion, while copulation by the ridgling will correspond in duration to that of the stallion. Again, we may find a horse that is undoubtedly a ridgling with positive evidence of having been cut into on both sides, and we are at a loss to know on which side the hidden testicle is located. If the end of the spermatic cord cannot be found in either inguinal region, and there is no other evidence, I prefer the left side, as my own experience has led me to believe that much more than 50 per cent. of cryptorchids have the hidden testicle on the left side.

W. B. E. Miller, D.V.S. (*American Veterinary Review*, May, 1894, page 91), excludes all animals from the class of ridglings except those which have undeveloped testicles floating in the abdominal cavity. The word undeveloped will apply to the hidden testicle of most cryptorchids, but not to all, as I have on several occasions found as well-developed testicles floating in the abdominal cavity as I ever found in the scrotum. Experience has also led me to believe the more perfectly the hidden testicle is developed, no matter where it is located, the more the animal will resemble the normal male.

Where surgical interference in these cases has previously been attempted and failed, castration is rendered more difficult and the prognosis more unfavorable, because the mutilation and modification of the inguinal region may be very considerable, and the operation should not be undertaken without informing the owner of the increased risk. I believe it is a good rule never to shoulder the bad results of another's mistakes.

The castration of cryptorchids is much more difficult than the normal horse, and was considered very dangerous, but at the present time it is not more so than other serious and difficult operations. In ordinary cases and under reasonable surgical precautions, provided patients have good after-treatment, the mortality should not exceed 3 per cent. The preparation of the horse for the operation and his subsequent treatment have largely to do with the prognosis. The horse should be in good general health, bowels loose from previous soft foods, and the alimentary canal should be as free from food as possible. Abstinence from everything except bran-mashes for forty-eight hours is advisable. A full abdomen makes the operation difficult to perform, and the prognosis doubtful. The instruments required are a castrating-knife and *écraseur* or emasculator. The surgical procedure is rendered easier by selecting a hillside for the operation. By placing the animal's back and head down the hill it is easier to keep him on his back, and, by the head being the lowest, the abdominal viscera will gravitate forward and lessen the tension of the posterior part of the abdominal wall, which greatly facilitates manipulation. The horse should be cast and tied as securely as possible, with the hocks and stifles drawn as far back as convenient, and the thighs spread well apart, so as to expose the inguinal regions. An anæsthetic may be used if preferred, but it is desirable to have the horse regain his feet after the operation in as steady a manner as possible, and this is not always obtainable when an anæsthetic has been used.

The horse being in proper position, incision is made in the scrotal region, commencing four inches back of the point of the sheath, and one or two inches from the median line, and carried backward parallel with the median line about four inches, or sufficient to admit the hand, cutting through the skin and dartos to the external inguinal ring. The cellular tissue here may be separated with the fingers, the hand anointed with carbolized oil, and the fingers formed into a cone. By a rotary motion a

canal can be opened up to the normal location of the internal inguinal ring, or the lower margin of an imperfectly developed canal. If the ring cannot be found, its location may be determined by measuring about three inches from the insertion of prepubic tendon to the symphysis pubis, along the course of Poupart's ligament. If the testicle or a loop of the cord has passed through, it will be found in the inguinal canal enclosed in the vaginal sheath. If found, it should be grasped firmly and brought to the surface, and a free incision made in the vaginal sheath; the cord should then be severed as in a straight colt.

In operating on this class the most important point is the incision of the vaginal sheath. It requires no little force to bring a short vaginal sheath to the surface, and the pressure thus applied to the testicle will cause it to push through a very small incision in the sheath. When the cord is severed the stump will return within the sheath. Infiltration and tumefaction soon close the small opening in the sheath and prevent the escape of the accumulations from above—a serious complication. To obviate this it is only necessary to make a free opening in the vaginal sheath. If I fail to accomplish this before the testicle escapes from the sheath, I enlarge the incision with a probe bistoury before severing the cord.

If the testicle or cord is not found in the canal it is an abdominal ridgling, and the operation becomes more difficult. In this case the end of the finger should be passed upward and outward somewhat beyond the margin of the internal inguinal ring, keeping back close to Poupart's ligament, and by a gentle pressure of the finger break down the peritoneal wall. This will bring the finger into the peritoneal sac at the attachment of the testicular ligament. The ligament or serous fold should then be grasped with two fingers and brought to the outside, and the testicle will follow. The operation is accomplished by severing the cord by the *écraseur* or emasculator.

It is not impossible for even an experienced surgeon to fail to properly locate the abdominal ring and get too far forward (Poupart's ligament will prevent one from going too far back). In this case it will be difficult to find the testicular ligament, and it may be necessary to insert the hand and search for the testicle. A large opening in the abdominal wall so far forward would be very liable to be followed by hernia of the small intestine, or a loop of intestine may be mistaken for the spermatic

cord and pulled down. While this is a serious complication, it is not necessarily fatal. Should this occur after applying the *écraseur* to the cord, the intestines should be returned, and the artificial inguinal canal packed with antiseptic gauze, or a soft cotton cloth, if other material is not at hand, then sever the cord. If the intestines are difficult to return the operation may be facilitated by passing the hand into the rectum and over the inguinal region, holding the intestines back as they are replaced by the other hand. A stitch or two may be taken if the peritoneal opening is large, and the horse allowed to arise at once, turning him over that he may arise from the side from which the testicle has just been removed. This cramps the inguinal region and reduces the danger of hernia or its recurrence.

It is necessary to use some care not to wound the blood-vessels in the inguinal region. The internal pudic veins form a very rich network above the penis, between the thighs, and in the texture of the scrotum. They are large and anastomose freely with each other, and are liable to be wounded in opening the external inguinal ring and inguinal canal. If this accident does occur it is generally necessary to ligate both ends of the divided vessels, as the pressure from the cramped position of the horse while cast will often prevent them from bleeding, but as soon as he is on his feet they will bleed profusely. The pre-pubic artery, after crossing the crural ring, gains the posterior aspect of the internal inguinal ring, and divides into the posterior abdominal and external pudic, the latter following down the canal to the external inguinal ring. Either of these may be wounded. To avoid this it is only necessary to remember that they lay internal to the vaginal sheath and internal inguinal ring, and all incisions should be made external to these parts.

The after-treatment will, to a greater or less degree, depend upon the surroundings. If the surgeon can have the patient under his own care, with sufficient sanitary conditions to warrant thorough antisepsis, then healing by first intention may be expected. To accomplish this it will be imperative to use the utmost precaution before, during, and after the operation. Operating-room, tables, sponges, and all instruments should be clean and sterilized. It is best to boil all instruments and sponges, scald tables, floors, and everything that cannot be boiled. If the patient is secured on the floor, clean straw or sawdust for bedding may be used, which should be thoroughly sprinkled,

preferably with an antiseptic solution, to prevent the escape of all dust from the bedding. When the horse is cast and properly secured, the inguinal regions should be thoroughly cleansed with soap and water. Before operating those parts should be thoroughly disinfected with the bichloride solution, or any other good disinfectant. The surgeon's hands should be thoroughly cleansed and disinfected. All instruments, after being thoroughly boiled, should be placed on a clean tray, covered with a towel saturated with the disinfectant solution. After the operation the wound should be thoroughly cleansed and dried and sutured, then a dry antiseptic dressing applied. When the animal has regained his feet a pad of absorbent cotton dusted with iodoform or some other dry dressing should be applied to the wound and secured with bandages over the loins and between the thighs, which should be renewed as required.

If, as is usually the case in country districts, the patient cannot have the best of antiseptic treatment, then healing by first intention does not seem to be feasible. Even then the surgeon should use every reasonable antiseptic precaution, but instead of suturing the wound it should be left open, and carbolized oil applied, which will tend to keep the wounded surfaces from adhering. The wound must then be opened once a day by inserting the fingers, well oiled, up to the internal inguinal ring, or the wound may be packed with antiseptic gauze, this to be removed twenty-four to thirty-six hours later. This insures good drainage and prevents integumentary adhesions. The patient should be tied, so that he cannot lie down. Colicky pains are sometimes present, and the horse is liable to roll, and if allowed to do so hernia may be produced. After the first day he should have plenty of exercise. Do not depend upon him taking enough exercise in a paddock or small yard, for but few will do it. One hour's steady walk is better than all the exercise he would take in twenty-four hours alone. If he is a work-horse, he can do his usual work every day after the first day. If peritonitis or other complications set in, they must be given appropriate treatment.

If the horse proves to be a double ridgling, both testicles may be removed at one time, if the surgeon prefers; or the patient may be allowed to recover from the wound by the removal of one before taking the other. If the first testicle is secured without much injury to the parts and without serious complications, I prefer to remove the second one at once; but in case of a diffi-

cult or complicated operation it is good practice to wait for recovery.

In the ridgling bull is usually found the infrascrotal form, and by feeling along the course of the penis the testicle is readily located. It may be removed where so found, the same as if in the scrotum. If it proves to be in the abdomen, it can be removed through the flanks, as in spaying. This is also the best method in the pig.

NUTRITION.¹

BY E. MERILLAT, VET. STUDENT.

NUTRITION, in the light we wish to consider it, is the acme of the physiological process of alimentation, assimilation, and respiration, the true nature of which, whether in highly organized parts, such as the brain, or in tissues, such as cartilage, nail, or horn, is unknown.

These processes are physiological puzzles, which, it is to be feared, will always be beyond the grasp of science. They constitute one of the mysteries always in the mind of every student of physiology, and may be compared with the question of the soul and its relations to the finite and the infinite, which humanity has been either compelled to admit upon the faith of revelation or to hopelessly abandon. It will always be interesting and satisfactory to those acquainted with Nature's laws and willing to accept theories upon the subject concerning which it is impossible in the present condition of science to give any positive information.

It has long been known that certain nitrogen compounds of the organism seem to have the power of reproduction or self-generation; and it seems that such a compound as protoplasm, with all the wonderful properties ascribed to it, would give us enough information concerning the formation of tissues to enable us to understand the process of nutrition, but, to the contrary, it simply covers up a multitude of unexplained processes between assimilation and disassimilation.

It is a known fact that some tissues undergo decomposition, and that the end-products are excreted, while others, when once

¹ Read before the Students' Association of the McKillip Veterinary College.

formed, undergo no changes, but are gradually desquamated. It is also a well-established fact that the nature of nutritive force or energy resolves itself into vitality, and that the living organism, to a certain extent, depends upon the vitality of the tissues.

Life is always attended with what is known as the phenomena of nutrition, and nutrition does not exist, except in living tissue, and yet there are few if any definitions for "life" which are not open to many grave objections. If we regard life as a principle, it stands as a cause of nutrition; but if we consider it as a result of nutrition, it is an effect. If we study a fecundated ovum in its development, it seems to have a principle which gives it the property of appropriating matter from the outside until it develops from a microscopic to a large body, and this body again develops to produce other ova, and thus perpetuate the existence of its species. It may seem that the organism dies, physiologically, because it has definite form and size, definite period of existence, etc.; but it produces an element capable of perpetuating life in a new being.

The principal forms of life which may interest us under this head are, viz.: First, the life of a fecundated ovum; secondly, the life of tissues; and, lastly, the life of the animal organism.

1. The life of a fecundated ovum is the property which enables it to develop when placed under favorable conditions.

2. The vitality of tissues during development is the property by which it arrives at its perfection to perform its function; and, when perfected, its life is the property which enables it to regenerate itself and perform its function.

3. The life of the animal organism is the sum of all vitalities of its constituent parts. A being may exist without certain parts of the organism without losing its identity. Also an animal may live a long time without consciousness, or an organ paralyzed, or its functions destroyed; but certain functions, such as circulation and respiration, are indispensable to the process of nutrition in all parts; and, as the vitality of the tissue is soon lost when either of these processes are stopped, the animal soon dies. Therefore, we conclude that respiration is a process which assists in nutrition.

We know that tissues have the property of appropriating oxygen and giving off CO_2 independently of the blood, and that arterial blood carries oxygen from the lungs to the tissues, and that venous carries CO_2 to the lungs to be exhaled. Now the question arises whether the action of oxygen in the economy is

the same as in inorganic bodies outside the animal organism. It must be remembered that in the organism we are dealing with compounds that have the property of self-regeneration, and that as a simple condition of normal existence they consume oxygen and give up CO_2 .

Without the proper supply of oxygen the tissues soon die, lose their properties, and finally disappear by decomposition. The consumption of oxygen cannot be regarded in any other light than as an appropriation of an element necessary to supply waste, and that it is appropriated in the same way as those materials which are nutritive. There can be no doubt that waste is continually going on in the tissues, and as the production of urea, creatin, creatinin, cholesterin, etc., is to a certain extent independent of the absorption of food, so is the production of CO_2 in a certain degree independent of the absorption of oxygen.

We can plainly see the difference between the action of oxygen in the economy and that attending the union and decomposition of inorganic matter. For example, by heating CaCO_3 we have a new compound (CaO), with entirely different appearance and properties, and the liberation of CO_2 . If we treat any carbonate with an acid we liberate CO_2 and have a salt of the acid which has no resemblance to the original compound. Or, if we expose iron to oxygen, it loses its identity, and the compound formed is the oxide of iron, or iron-rust. A still more striking change takes place in the combustion of fats, the products of which are CO_2 and water, and the fat disappears. In the living organism the organic compounds are continually changing, breaking down, and forming various excrementitious principles, at the head of which is CO_2 , but the tissue always remains the same, although to ignore the combustion theory altogether would simply be denying a fact. It is essential that the tissues maintain a certain chemical integrity, which requires a supply of new material as food, and, above all, a supply of oxygen; therefore it may not be wrong to call oxygen a nutritive element (?).

It is sometimes said that respiration is a slow process of combustion, but when we examine the blood we learn that oxygen is not consumed in the lungs, but is carried to the tissues by the circulation, and that CO_2 is brought to the lungs to be exhaled. These facts, in connection with the fact that the tissues consume oxygen and give off CO_2 , lead us to change the location of

combustion from the lungs to the tissues. We know that the organic principles of the body which form the bases of tissues are continually changing in their normal condition; that after a period of existence they degenerate into excrementitious matter, and are regenerated by a change of material furnished by the blood. As far as respiration of these parts, we can only say that oxygen is consumed and CO_2 is liberated. The process by which this is done is as complex as that of nutrition, and so far no one has been able to give a reason for the absorption of oxygen and the exhaling of CO_2 , or to explain the condition of oxygen or what is lost in the formation of CO_2 .

The questions which naturally arise are: 1. How is oxygen consumed? 2. How is CO_2 produced? 3. What takes place between the consumption of oxygen and the evolution of CO_2 ?

Oxygen is supposed to be absorbed by the red blood-corpuscles and to enter into their composition and be carried to the tissues, where it is consumed with the nutritive material in the circulation. We know very little of the laws which regulate the consumption of oxygen, and are not able to find out the exact changes resulting from the action of it upon the tissues. There is no evidence in favor of the view that oxygen unites directly with the carbon in the blood which it meets in the lungs to form CO_2 ; but it is more plausible that it unites with the organic principles of the system and supplies the imperative want, which is felt by all animals and in all parts of the body. The fact that CO_2 can be produced artificially does not prove that its formation in the body is as simple as when formed by combustion. We are not justified in supposing that the formation of CO_2 in the process of nutrition is the same as when produced by chemical means. It is more reasonable to suppose that it is produced as a product of excretion. The CO_2 thus formed is taken up by the blood; part of it in a free state and part in solution is given off by the lungs in simple displacement, and the remainder combines with the carbonates to form bicarbonates. We conclude, therefore, that CO_2 originates in the tissues as a product to be excreted in the process of nutrition, but we do not know what effect its evolution has upon them.

We also know that oxygen is consumed by the tissues as an element to supply waste, but its immediate effects are unknown. When we can tell what occurs in the tissues between the assimilation of oxygen and the evolution of CO_2 our knowledge of respiration and nutrition will be complete, but this at present no one

is able to explain. We only know that oxygen is a principle of nutrition and that CO_2 is a product of excretion. The immediate process between the two belongs to the function of nutrition, and we know nothing of its immediate nature. We have not enough evidence to suppose that the process is the same as that known as combustion.

We can scarcely realize the extent of the problem of nutrition from a review of the functions we have already considered. We know that blood contains all the elements that enter into the composition of tissues, either identical as organic principles or in a form that will allow them to be changed into principles of the tissues as organic principles, and that these principles are supplied to the tissues by circulation, and are continually drawn through the tissues to supply them with raw material for their regeneration, and are kept to the proper standard by the introduction of new matter into the system by alimentation, etc. The introduction of the new matter is in demand on account of the changes of the substance of the tissues into what we commonly call waste or worn-out matter, and this is discharged from the animal organism to be appropriated by the vegetables, and thus maintain the equilibrium between the two great kingdoms.

The inorganic compounds that are taken in as food are discharged in the form that they enter, either as feces, urine, or perspiration, but it must not be inferred from this that they are not useful as constituents of the body. Some of them are more abundant in the fluids than in the solids (NaCl), while others are more abundant in the solids than in the fluids (lime salts), and their function is mechanical.

The organic principles are divided into nitrogenous and non-nitrogenous. The nitrogenized principles contain carbon, hydrogen, nitrogen, and oxygen, sometimes sulphur. These principles are taken into the body and, after undergoing a change in digestion and absorption, are excreted as excrementitious matter. The nature of these series of transformation is unknown, but we know that the deposition of tissues constitutes one important act of nutrition. The modification of nutrition, due to its supply, has a well-defined limit, as, for example, an excess taken as food is not discharged in the feces, nor does it pass off in the form in which it entered, but apparently becomes absorbed by the blood and increases the quantity of urea; whether the quantity not needed in nutrition is transformed

into urea in the blood or increases the activity of dissimilation in the tissues is hard to determine; however the excess of inorganic matter is thrown off nearly in the same way as an excess of organic, the difference is that one is excreted as it enters and the other as urea.

The non-nitrogenous elements taken up by the blood are sugars and fats. Sugars consist of carbon, hydrogen, and oxygen in the proportion of water (H_2O). It is never discharged from the body in health, and is never deposited in any part of the organism, even as a temporary condition. It can be converted into CO_2 and water or lactic acid ($\text{C}_6\text{H}_{12}\text{O}_6 = 2\text{C}_3\text{H}_6\text{O}_3$). It does not enter into the composition of tissues, but may take the place of albuminoids in oxidation to form fats, and is no doubt an important factor in the production of heat ($\text{C}_2\text{H}_{12}\text{O}_2 + 12\text{O} = 6\text{CO}_2 + 6\text{H}_2\text{O}$), which may be the source of energy, *i. e.*, part of the heat produced being converted into mechanical force.

The next class of non-nitrogenized principles is fat. It is found in the organism in the form of adipose tissue, and is consumed in the production of heat. It is a principle always found in the body and never discharged as fat. It is formed in the economy by the oxidation of albuminoids and carbohydrates, and may also be taken into the body by absorption. When once in the circulation it is soon destroyed or deposited in the form of adipose tissue. It takes no part in the formation of other tissues, and, in the absence of carbohydrates in the circulation, serves to maintain the temperature of the organism and to generate energy. Therefore we may consider fats and carbohydrates potential energy, and the oxidation of them forming kinetic energy. They occupy an important position between nitrogenized and non-nitrogenized principles, *e. g.*, albuminoids may be oxidized and become fats, and carbohydrates may in the same way become fats, but fats cannot become albuminoids nor carbohydrates; and, again, we also know that in the combustion of fats and carbohydrates the end-products are identical (CO_2 and HO_2). Therefore it would not be wrong to suppose that their ultimate functions are identical.

We shall now briefly recapitulate and draw a conclusion, and for convenience shall divide the propositions into primary and secondary. The primary propositions are the functions of principles, *etc.*, and are as follows:

1. That the inorganic principles have a function that is purely mechanical.
2. That the function of nitrogenized principles is to form tissues.
3. That the function of non-nitrogenized principles is to produce heat and energy.
4. That the life and regeneration of tissue-cells resemble the life of a fecundated ovum.

The secondary propositions are, viz. :

1. That tissues are composed of cells.
- 2 That tissues maintain their normal integrity by regeneration of cells.
3. That regeneration of cells resembles the development of a fecundated ovum ; and
4. That the cells act upon the nitrogenized principles as the germ or nucleus of an ovum does upon its albumin.

Now the conclusions we can draw from the foregoing propositions are as follows: That we concentrate the processes of nutrition to the proliferation of cells ; and that the way in which this is done is attributed to the changes that occur in the protoplasm of the cell. Therefore we see what a useful, wonderful, and indispensable chemical compound protoplasm is to the student of physiology and pathology. In the demonstration of unexplained processes of physiology, and in the explanation of pathological processes or deviation from any normal physiological condition, the scientist always takes refuge in the dark, unfathomed recesses of protoplasm.

HORSE-BREEDING.¹

By J. A. NESS, D.V.S.,
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THE subject which I have chosen to bring before your notice this evening, viz., horse-breeding, may be somewhat of a digression from the usual essays presented to the Society this session, but one of no little importance to the practitioner of comparative medicine and veterinary science, and a knowledge of which will aid him materially in practice. The breeding of domesti-

¹ Read before the Montreal Veterinary Medical Association.

cated animals for the various purposes to which they are adapted has been practised from the earliest times. The oldest writers on agriculture gave directions for the breeding and improvement of live-stock, and many of their maxims are repeated to-day as the best practical guides to the breeder. Before going into detail on any one breed we will consider some of the principles which underlie successful breeding and must be thoroughly known. First and most important of all is heredity. Heredity, so well expounded by Darwin, is the perpetuation of like characteristics in parent and offspring. The general principles which govern the transmission of hereditary qualities from parent to offspring are without doubt the same throughout all animal life. This characteristic has long been known, and is the result of observation forcibly expressed in the familiar aphorism, "like produces like," and, as an inference of this generally accepted law of the animal organization, we would naturally breed from the best. This selection as "best" must not be continually changing, else no progress will be made, as heredity only transmits with certainty what has become a fixed characteristic in the breed.

Oliver Wendell Holmes, in his *Autocrat of the Breakfast Table*, gives utterance to his faith and belief of heredity when he says, "Of the human family, I go always, other things being equal, for the man who inherits family traditions and the cumulative humanities of at least four or five generations." It is one of the principles of heredity that when there is great uniformity in a species divergences from the usual type in the offspring are rare; but when this uniformity, no matter from what cause, has been broken up, divergences are frequent and great, although there is always present a tendency, more or less powerful, to revert to the original type. This tendency is most frequently manifested when breeds or races, widely differing in their present forms, are crossed upon each other. In such cases it frequently happens that the progeny resembles neither parent, but shows strong marks of the type from which it has originally, or rather both of its ancestors originally, sprung.

This tendency to reversion in different breeds of domestic animals when crossed accounts for many of the disappointments which breeders experience in their efforts to improve their stock, and serves greatly to complicate the breeding problem. Bakewell, who was one of the first improvers of the live-stock of Great Britain, regarded the animals on his farm as wax in his

hands, out of which in good time he could mould any form that he desired to create. He believed that the familiar maxim, "like begets like," was not limited to a general similarity of offspring to parent, but extended to the minutest details of the animal organism.

What can be said on heredity with regard to normal characters also applies to disease. Any abnormal peculiarities of the animal organization constituting disease, whether of structure or function, are liable to be transmitted from parent to progeny. Heredity disease may be congenital—*i. e.*, make its appearance at the time of birth, or a considerable length of time may elapse before any indications of its presence are observed, in which case a predisposition or tendency to the disease is inherited, which often requires some external exciting cause for its development. There are certain diseases that are transmitted with greater uniformity than others, yet a predisposition to almost every known form of disease is likely to become hereditary even if the influence which determines its transmission is not sufficiently intense to render it congenital. When the general constitutional predisposition is inherited the conditions to which the animal is subjected, as to food, exposure, etc., may have an influence in determining the particular organ in which the disease is developed. Without a further enumeration of details it may be said that every peculiarity of the animal organization is influenced by heredity. Sometimes we may meet with striking differences between the parent and progeny, but the points of resemblance are greater than those of difference, as a rule. It may seem as though I have dwelt too long on the subject of heredity, but it cannot be too forcibly impressed on the minds of would-be successful breeders.

In the selection of breeding-stock the first step for the breeder is to decide what sort of a horse will bring him the best returns. Success in the breeding of live-stock must be measured by the actual value of the products and the profits that may be derived therefrom. If his interest leads him to breed for the race-course he must keep constantly in mind the fact that for this purpose, whether for running or trotting, speed and endurance of the very highest order are indispensable; but if the breeding necessitates a direct livelihood therefrom, he had better leave the breeding of race-horses to the man with the money. For the ordinary breeder must consider the horse that sells best on the market, or rather the horse for which there is the greatest de-

mand. and that is in order of merit: First, the large, stylish, high-stepping carriage or coach horse. With the proper stock to breed from such horses may be bred with a good degree of certainty. Such as prove deficient in style and action make good express horses, but to command the best prices they must be rather "rangy" and possess higher knee-action than is desirable for ordinary work. Second, the heavy draught-horse, from fifteen hundred pounds upward, as heavy as possible, without departing from quality to obtain such weight. Further remarks will be confined to the draught-horse in particular, as I have had more experience with this class.

In the selection of the sire you must first investigate his pedigree, which, as you well know, consists of the names of the ancestors for a greater or less number of generations. Its value consists not so much in the number of generations through which the ancestry can be traced to some progenitor, as in the quality or character of the ancestry or the merits of individuals that compose it.

Having satisfied yourself of his breeding, you now secure the form of horse desired. There are, no doubt, several breeds of draught-horses, all of which have their qualities and faults; but for the purpose of description I shall try and enumerate the points necessary in good draught-horses without taking up any special breed, which are, beginning at the head, as follows: The head should be of medium size, in proportion to that of the body; the forehead broad between the eyes, tapering upward in the direction of the ears; the jaw broad but not large or loaded with flesh; the nasal bones, if not straight, slightly arched, but not dish-faced; the muscles not too refined or tapering, with the nostrils wide; the eye bright and dark, full and vigorous, yet mild; the ears of good size, tapering to a point, neither hanging, showing sluggishness, not prick-eared, but with frequent motion indicative of a good disposition. Such a description of the head rarely finds a vicious temperament, which latter must be detested in a breeding sire.

The neck should be of good length, clean-cut at the jaws, well set on at the shoulder, with gradual tapering, but slight arch from the occiput to the highest point of the withers. The chest must be broad, full, and deep—a hollow chest suggests decided weakness. The shoulder should be closely knit at the withers and oblique, though not necessarily so much so as in the race-horse. The humerus should form a very obtuse angle with the

scapula, or else the animal cannot well advance the limb in motion. He should be well up at the withers. The back should be short and strong; the ribs of great depth and rounded, barrel-shaped; he should be full at the heart, and girth well, allowing plenty of room for the expansion of healthy lungs. The length, or rather depth of body at the last rib, should be great, as this is too often a defect in the draught-horse, and a serious one, as it suggests a poor feeder and also gives him a leggy appearance. The hind-quarters of good length, well-muscled and round, the thigh being well developed and strong.

The last in consideration, but by no means the least, are legs and feet. As our dean forcibly expresses himself on this point, "No foot, no horse," and observation should confirm the statement. The indications of a good leg are firmness, hardness, and smoothness to the touch, showing an entire absence of adipose tissue; large, well-defined joints entirely free from any abnormal appendages. The knee-joint should be broad and flat. The hock wide from before backward, giving the leg a somewhat crooked appearance rather than straight, the former giving strength. The length of bone short from the knee and hock to the pastern. When standing the hocks should tend to be close together. The large metacarpals should present a flat side-view, rounded anteriorly and tapering posteriorly, and of good size below the knee; the tendons at this point well defined and strong. The pasterns of medium length and set on rather oblique so as to give the necessary elasticity to counteract the concussion caused by the firm step. If long they are weak, if short and upright they are liable to knuckling.

The feet are, of course, very important. In shape the medium between a flat foot and a mule foot is preferable, of good size, with a large degree of concavity in the bottom. They must also be firm and elastic, without cracks and free from brittleness. The fore- and hindlegs must be set on straight, as an out- or an in-toed horse is decidedly objectionable.

All the preceding points are to be observed in the standing posture, and, when fully satisfied in these particulars, it is very essential to see that, having four good legs, the horse has the ability to use them properly; that he steps with a firm elastic tread; and, especially in the draught-horse, he must be a good smart walker; that the legs and feet do not get in the way of each other when he is in motion, but move freely without interference.

The general management of the sire is of great importance. It is a frequent mistake to have the sire in fine show condition when the season opens, and apparently in the pink of condition; but he is not nearly so well fitted for service in the stud as he would have been had this extra feeding been dispensed with. Such treatment is a drawback to the horse as a sure foal-getter. The point to be aimed at in the stable management of the sire is to feed, groom, and exercise so as to keep the horse up to the highest pitch of strength and vigor. He should be well and regularly fed on healthful, nutritious food, with plenty of exercise every day; let him be well groomed, the skin be kept clean by frequent brushing and rubbing, which also keeps the circulation in good order. Anything that adds to the health and strength and vigor of the horse will increase his sexual power; on the contrary, whatever tends to impair the general system will have a deleterious effect on the sexual organs. A healthy animal needs nothing but good food, pure air, plenty of exercise, with due attention to cleanliness and regularity of feeding and watering; and if such be attended to, but little will befall him unless by accident. He should be kept in a loose box at least twelve by sixteen feet, more if possible, which admits plenty of sunlight and is well ventilated; containing internally as few projections as possible upon which he may injure himself. It is well to have the loose box lined around with heavy material, standing out at the floor about one foot from the wall, sloping upward and inward to the wall, about three feet and a half high. By so doing it will be almost impossible for him to injure himself by rubbing or in any other way. In such a box he need not be haltered, and the owner may feel assured that the liability to injury is reduced to the minimum.

In the selection of the dam the same may be said as in the case of the sire. It is desirable that she should have a great depth of body with well-sprung ribs. As a rule, the female of any breed is somewhat finer in build than the male, and seldom reaches the relative weight of the sire. She must, as in the sire, be sound and free from any vicious temperament. What was said of overfeeding in the sire also applies to the dam, and is supposed to be the cause of barrenness to a certain extent in the dam. It is not advisable for her to breed before the age of three years. If she be younger or if she be too old, the foal may be small and weakly. The most fertile period in the life of the dam is usually from five to fifteen years of age. Above

this age they usually become more uncertain, and regular breeders well up in years are comparatively rare; although there are exceptions to this, and instances are related of mares over twenty years of age producing healthy living foals, but such cases are rare.

When the time of foaling approaches the dam should be turned loose in a large box-stall, or, if the weather be mild, in a paddock. About the best time for foaling is the latter end of May, as there is an abundance of green food, and this is before the heat of summer sets in. The mare should be closely watched, as there are certain signs of parturition which rarely fail. The udder becomes greatly distended some time before foaling, but the teats seldom fill out full to the end until a day or two before the foal is dropped. When the mare is a valuable and well-bred one, and the foal expected to be a good one, it is well worth watching her closely, as many valuable animals have been lost which by a little attention at the right moment might have been saved. Other signs of parturition are wax-formation on the points of the teats, and a relaxation of the hindquarters, and a few hours before foaling she shows signs of uneasiness.

For a certain time previous to parturition she should be fed on soft food so as to keep her bowels open and free from constipation. Many mares are at best poor nurses, but her food may be made to greatly influence her yield of milk. The first milk after parturition, or colostrum, contains principles adapted to remove the meconium; on that account it is highly necessary that the newly-born foal should be supplied with the milk from its own dam, at least until the meconium has been expelled and the bowels have assumed their natural function. Until the approach of the time for weaning a foal should be permitted to have free access to its dam, otherwise in the young foal it may result in constipation or some other derangement of the digestive tract, which is serious in a very young foal. After eight or ten days of age the foal, if in good healthy condition, will probably give you but little trouble; but if it should necessitate treatment during the first four or five days of its life, little can be done, as the only internal treatment is by the dam, and that is unsatisfactory.

The weaning of the foal should be done gradually. It is always well to have the foal taught to eat all sorts of food before removing it from the dam, and it should be handled well and carefully from its birth. If such be carried out properly when wean-

ing-time has come, which should be done at five or six months, confine the foal in a loose box, in which there is nothing for it to get entangled amongst, and feed on soft feed which you have already taught it to eat. It is much better to separate the foal and dam entirely, because if they are brought together it only lengthens the period of weaning. In the meantime the mother's diet should consist of dry feed, and it is well to put her to work. The milk must be removed, but not milked dry every time. With the dry feed and work the secretion of milk will soon cease. From this time until the foal becomes a yearling it should be well fed, as a stunted foal never matures properly, and more colts are injured during the first six months after weaning by a too scanty supply of food than from the opposite extreme.

As soon as the foal is properly weaned it should have the run of a good pasture, as there is no food better than grass, no medicine so good as exercise, fresh air, and sunlight, and no exercise so profitable to young animals as that which may be taken just when they feel like it.

In conclusion, permit me to say that the subject of breeding is a wide and important one. There are omissions and points not yet touched upon, but which cannot be without making any one paper long in the extreme. Suffice it to say, that the general requirements of the successful breeding and raising of horses are plenty of good food, fresh air, and exercise for the development of the animal organism.

HOMEOPATHY IN VETERINARY PRACTICE.¹

BY A. V. ABBOTT, D.V.S.

In presenting this paper for the consideration and discussion of this Society to-day I am fully aware that I shall be obliged to defend it alone, as I think none of you practice by this method. Such being the case, coupled with my limited knowledge of the subject, I anticipate in your judgment "coming out at the small end of the horn," as is the common expression, but I shall nevertheless endeavor to bring some of its advantages as seen by me to your attention.

First of all, what is homeopathy? You have already heard

¹ Read before the New Hampshire Veterinary Medical Association, May 5, 1896.

the doctrine, *similia similibus curantur*, until you know perfectly well what it means, so I will pass that by. Another has called it nature's law of healing. We have all, no doubt, thought to ourselves how little we could do with our medicine unless nature should be willing to help us. That leads us, then, to think that we must try to help and not force nature. Nature never purges the bowels unless there is some obnoxious material contained therein or other abnormal cause acting. Well, then, you say, if we give a small dose of aloes or oil in this case, are we not helping nature to throw out this material? Certainly, and if the aloes, oil, or other drug is selected with regard to its homeopathic relation and given in a small dose, it will check it and not leave as bad a case of constipation as we formerly had of purgation, either. Of course, some of the old ideas and teachings as regards minor points are not in vogue to-day, but still the grand foundation of the work remains the same, and will as long as it is called homeopathy. Surgery, engineering, electricity, chemistry, and, in fact, all the sciences and arts, have made great progress within the last few years, and you surely would not expect homeopathy to stand still.

Now then, if nature is to help us, and we in turn try to help nature, tell me the reason in giving medicine in such powerful doses as will cause its effects to be felt and nature to be disturbed and perverted for long periods after the disease has disappeared. Surely this is not desirable. We have often heard people remark that their eyes have been weak ever since they were sick with this disease, or that they have had heart-trouble ever since they had that once, and similar remarks. We cannot say it is always the case, but still quite frequently, that these effects can be accounted for if we look at it from a homeopathic standpoint, and occasionally you will hear the remark from an allopathic source. In the late war, I have been told by a soldier, it was the custom, when a man felt a little indisposed, to get a big dose of quinine and wash it down with a stimulant. He said it made no difference what the trouble was, especially at the start, they always took that first. The same man, who was not a homeopathist, also said the effects were still left, and he expected to carry them to his grave.

Probably a few of the more important points, as well as some of the fundamental rules, would be of interest in helping us to understand true homeopathy. The homeopathist explains his

theory something like this : If a certain symptom or a collection of symptoms is seen in a case, there is a certain nerve-centre or set of nerve-centres affected by something not found in the healthy body. Now, if a certain drug in any healthy body will cause these same symptoms, it is reasoned that the same set of centres are affected by the drug. This is certainly a rational way of explaining it. Then if this same drug is given in a very small quantity it will act on and correct or modify the action of the same centres. The fundamental principles as given by Dewey are these :

1. That disease is manifested by symptoms.
2. That knowledge of drug-action should be obtained by experimentation on a healthy body.
3. That the curative relation between these two sets of phenomena is the law of similars, or *similia similibus curantur*.
4. That the selected remedy should be given singly and uncombined with any other.
5. That it should be given in the smallest dose that will effect a cure.

The only indication needed for the selection of a remedy is the totality of the symptoms in the particular case. In this totality even the symptoms are not all of like importance, for the more prominent, uncommon, and peculiar need the most attention, for often the general symptoms are common to more than one drug. These peculiar symptoms of any disease are termed characteristic symptoms, and are always the safest to follow in the selection of a drug. In fact, I have often had good results in prescribing where I have done so on one symptom alone, providing that stood out prominently. We sometimes get an aggravation after a varying period of administration, as often is the case with phosphorus, which is looked upon as a favorable sign, and proof that the remedy selected has been the correct one.

Absolute cleanliness should be ever sought for in preparing and dispensing medicines. A bottle once used for medicine is unfit for another kind or higher attenuations of the same kind ; but I am satisfied if it has been washed out in boiling water, and contains no odor, when using the mother-tincture or the first potency.

The medicines used are either in the form of tablets, triturations, or dilutions. A trituration is a medicine combined and thoroughly mixed with sugar of milk which has been recryst-

tallized. Tablets are a compressed form of the trituration. A dilution is the medicine mixed with alcohol. I use water usually on account of the price, and fail to see why alcohol is better, providing the water is pure, unless it is to be kept for some time. A strong tincture, one-sixth drug strength usually, is called a mother-tincture. The IX. is one part of the tincture and nine of alcohol. The 2X. is one part of the IX. and nine of alcohol, and so on. The triturations are made with the salts of metals and minerals, rubbed up with sugar of milk, and in the same proportions. Many of the remedies, such as sulphur, lycopodium, psorinum, etc., are claimed to act far better in the higher potencies, as, for instance, the thirtieth. Some think all the remedies act better high and others low, and I myself find that a good deal depends on the drug used; but all this is of minor importance and should be left to one's own ideas and experience, for the question in homeopathy is not the dose, but the remedy.

Some of its advantages over the old school may be enumerated as follows: It cures disease in the safest and quickest manner. Dangerous drugging and debilitating measures are no part of its teachings. Its cost is certainly advantageous. Diseases beyond the reach of allopathic medication are cured by it. Its use often renders the knife unnecessary in the treatment of tumors, etc. The development of diseases and malignant growths are prevented in their incipency. And when we come to its administration, see how much more convenient it is for your client or yourself to place a few drops of a solution or a small powder on the tongue of your patient than it is to use a syringe, give a pill, or pour a drench into a horse which heartily objects to the bottle. Of course, its cost and administration are of secondary importance, providing the effects of the treatment should be favorable to the other system; but if they are not, these two should certainly be considered. I fully believe in homeopathy, although I do not as yet use it in the treatment of all diseases, and for this reason: There are a few diseases which yield very satisfactorily to allopathic treatment, and, in fact, it would be hard to improve upon their treatment, except as a matter of cost or administration, so I have delayed their homeopathic treatment until such a time as I can have studied enough to be thoroughly acquainted with the *materia medica*.

I suppose the most interesting part of this paper will be the

account of its application in a few cases which have come under my notice, and I hope you will not connect anything that is said with self-conceit, but rather place it where it is intended to go, viz., to the credit of homeopathy. The first two or three cases will show its effects upon injuries of the tendons and muscles. Was asked to look at a brown gelding, five years of age, which had been castrated in the early spring of 1895, and in the process of casting and the operation his loins had been severely sprained, and at the time I first saw him, some four or five months after the operation, he came out of the box on his toes, with the heels of both hindfeet raised from the floor about three-quarters of an inch. There was also considerable soreness evinced by slight pressure on the lumbar muscles. I left a small bottle of *rus tox.* 2X., enough to go about ten days, with directions that he should receive fifteen drops four times a day, and that he should be exercised as usual, which was an hour's driving each day, but to avoid tiring. My client was to report to me when the medicine was gone, at which time I would either change or repeat it. Not hearing from the man as agreed, I hunted him up one day, when in answer to my query as to his negligence in not reporting to me before, he replied that he thought it unnecessary, as his colt was all right, and he had some of the medicine left.

One Tuesday was called to see a roan gelding, which was very lame on the near front, and suffering from strained tendons and suspensory ligament. The tendons were swollen so that the leg was perfectly round, and it was impossible to extend the limb fully. He was driven the following Sunday after receiving *rus* internally and externally. The medicine was continued for a week longer, however.

I have treated a great many cases found in the same condition with like satisfactory results, but some of them required a little more time and patience, although not near the time required for firing and blistering. I have not tried this treatment in any chronic cases of the same kind, principally because the thermo-cautery gives good results both to our clients and to our own pocket-books.

December 8, 1895, was called to see roan filly, two years of age, which had been going lame for a few weeks. Could find no acute lesions, but a little soreness in the external scapula muscles. As the filly was very narrow-chested and rather light in the forequarters generally, I attributed it to a weakness of

the muscles, probably aggravated by a slip or fall. She received *arnica* internally, and the same made into a lotion externally. After three weeks she went sound, and has remained so since. I have found *arnica* to bear about the same relation to the muscles that *rhys* does to the fibrous structures.

I have given nothing but the homeopathic remedies in colic for a year now, and have had to record no fatal cases with the exception of one, which revealed a ruptured stomach on post-mortem examination. I have divided the treatment between *colocynth*, *chamomilla*, *aconite*, *belladonna*, and *nux vomica*, principally, given according to the symptoms presented. In pneumonia and bronchitis I have discarded all allopathic treatment, relying upon *aconite*, *belladonna*, *phosphorus*, *mercurius*, *bryonia*, *tartar emetic*, *gelsemium*, *arsenicum*, *lycopodium*, and *iodine*, given as the symptoms called for them. I have had opportunity to try it in but one case of parturient apoplexy, which came out very satisfactorily after being down five days. In all the minor troubles, such as catarrh, laryngitis, pharyngitis, vaginitis, diuresis, leucorrhea, bruises, etc., I use it exclusively. In conjunctivitis and periodic ophthalmia I have had most excellent results.

Now, in discussing its successful results, we must admit one of two points, viz., that the treatment has cured the disease, or that the same would have recovered as satisfactorily without any treatment, which, of course, would be hard to deny, no matter what the treatment. We certainly must honor one of these points.

Many of the allopathic medicines are used in strict accordance with the law of similars, although they are explained in an entirely different manner. *Belladonna* is a constituent of nearly all laryngeal cough-mixtures and electuaries, and if you will look in a homeopathic materia medica you will find that "the larynx is sore and hot," "great dryness and bright redness of the throat," "the fauces are inflamed, and food and liquids are ejected through the nose on swallowing;" also "that there is a dry, hacking cough" as its principal throat-symptoms. *Nux vomica* is given frequently in inactivity of the bowels, and, according to Finlay Dunn, "it overcomes chronic constipation." If we look in a homeopathic materia medica we find that "prolonged and severe costiveness with intestinal inertia" is one of its chief symptoms. The recent antitoxin treatment for the various diseases belongs to the system of

isopathy, which in some ways resembles homeopathy very much. Finally, I will conclude, gentlemen, by asking a few favors and giving a little advice. Do not rely upon what I have said for the treatment of any disease until you have found the indications as given in some reliable work. Do not try it at all until you have made yourself pretty well acquainted with its principles and have come to the conclusion that it is at least worth trying. Do not be too harsh in your judgment of it until you have given it as reasonable a trial as you would some new agent in the old school. If I am unable to answer some of the questions put to me in regard to it, please remember that I am yet young in its study, and that I have simply intended to open the subject, hoping that thereby you will be induced to inquire into its teachings in your leisure time, and, if found worthy, to give them a good fair trial in your practice.

Coaching, a Philadelphia paper devoted to the interests of horsemen, has changed its name to *Whip and Spur*.

An Alsatian has arranged a suitable harness with pole-gearing attachment passing from the bicycle to the rear, by which he utilizes his dog as a motor-power for propelling him along on his rides.

Sweden reports a radiator machine by which butter may be made from sterilized milk in one minute.

Wild animals are not exempt from the ills of seasickness when being transported from one country to another, and present many curious groups of symptoms at times.

The *Breeder's Gazette* says Salem County, Missouri, has the largest mule. He stands 21 hands high and weighs 2000 pounds; Ohio the smallest horse, two years old, and only 13 inches high.

A great many of the leading breeders of dogs in our country have already sent valuable contributions to the new kennels at Washington, D. C., and the projectors are highly encouraged at the prospect of having a valuable display at the national "Zoo."

The consulting veterinarian to the Humane Society of Washington, D. C., attaches the handle of homeopathic veterinary physician and surgeon to his name.

ABSTRACTS FROM FOREIGN JOURNALS.

UNDER THE DIRECTION OF

J. PRESTON HOSKINS, PRINCETON, N. J.

THIRTEEN NEW CASES OF TUBERCULOSIS IN THE DOG. The dog was formerly considered to be proof against tuberculosis, but since autopsies are carried out with greater care, and especially since we possess in the bacillus of Koch a sure means of diagnosis, this opinion has been proven erroneous. There have been recently published abroad at least 100 cases of alleged tuberculosis in the dog. Cadiot alone has reported more than 40, Jensen 28, Eber 11, and Fröhner, who observed 27 last year, has just announced a series of 13 more. The Berlin professor takes advantage of the occasion to make some general remarks upon the chemical, anatomical, and pathological characteristics of tuberculosis in the dog, and gives in detail his observations. We shall confine ourselves to the general remarks. Almost always suspicion as to the existence of the disease is first aroused on hearing the statements relative to the subjects submitted for examination. In most cases it is learned that the dog coughs or has been short of breath for some time; that he has been running down; and that all remedies employed have proved ineffectual. In some cases the disease has developed very rapidly—in two or three weeks; at other times the cough and difficulty in breathing are lacking, but there exist a serious loss of appetite and very rapid emaciation. In the majority of cases tuberculosis presents the clinical symptoms of a chronic affection of the lungs or of the pleura; more rarely it shows itself in the form of a chronic catarrh of the bronchus, or of the hydrothorax. Progressive emaciation combined with the existence of an irregularly intermittent fever strengthen the suspicion. In seven cases Fröhner made use of tuberculin in the form of a hypodermic injection; five times the temperature rose from 0.8° to 1.5° , once the elevation was only 0.4° , and in the last case the thermometer showed a fall of 0.5° . In some cases the reaction followed after two, three, or five hours; again it did not appear until ten or twelve hours had passed.

The lesions found at the autopsy varied according to the age and the localization of the disease, the organs of the thorax being those most frequently affected. In the last thirteen cases

observed by the author the lesions occupied the lungs and pleura 11 times, the liver 10 times, the bronchi and the ganglions of the mediastinum 6 times, the pericardium 5 times, the kidneys 3 times, the spleen 1 time, all organs involved 1 time. In the lungs Fröhner has found oftenest the cavities and the caseous masses extending as far as the pleura. In some cases the lungs presented large pneumonic nodosities or small miliary granulations of a tuberculous nature. Often there was adhesion of the lung to the costal wall; sometimes this adherence extended to the neighboring ganglions; accompanying the lesions of the lungs atelectasis, oedema, emphysema, and bronchiectasis were noted. The pleural lesions consist sometimes of a serous or sero-fibrinous pleurisy, more rarely hemorrhagic, with considerable effusion (overflow); sometimes of a dry, granular, and adhesive pleurisy. At times the author observed disseminated miliary tubercles upon the pleura accompanying empyema or hydrothorax. The inferior cervical and the anterior and posterior mediastinal bronchial ganglions were enlarged and often adhered to one another, forming sometimes a mass as large as the fist, which upon being cut showed a pale-gray color and either soft cavities or tubercular granulations. The mediastinum was almost always much thickened. The pericardial lesions were sero-sanguinous effusion, fibro-granulous and adhesive inflammation of the serous membranes, and miliary tubercular infiltration of the walls of the sac. The liver, spleen, and kidneys presented miliary granulations.—*Monatsheft für prakt. Thierheilkunde*, vol. vi. Heft 9, from *Annales de Médecine Vétérinaire*.

SOME ACCIDENTS OBSERVED ON HORSES OF PURE ENGLISH STOCK. The very considerable increase in the number of racing horses of pure English stock at Brussels and vicinity has given veterinarians many opportunities of observing various anomalies, the result of collisions or wounds, or happening during the regular running gait of the race. There was noted a series of lesions which may be classified as distention of the tendons, on which subject I hope soon to be able to publish a general work in collaboration with Prof. Degive. These lesions are most frequent in horses of pure English stock. They occur especially in the forelegs, either on the perforans or upon the perforatus, or on the suspensory ligament of the fetlocks. Each of these organs may be affected singly; in other cases only the perforans and the perforatus were found affected, while the

suspensory ligaments of the fetlocks were normal. Twice the lesion on the perforans and the suspensory ligament was observed, the perforatus being intact. By distention of the tendons is understood a lesion which is called snapping. It consists essentially in a severance more or less complete of the constituent elements of the tendon. Such is at least the primary lesion. This distention is always accompanied by very rapid tearing of the vascular and nervous membranes. These phenomena are often marked; but in some cases the effusion of interstitial blood is slight and the increase in the size of the organ not noticeable. Usually there appears very rapidly a diffuse congestion, hot and sensitive to pressure, often extending along the whole length of the tendon from knee to fetlocks. In the beginning the pain is intense and the lameness marked; this painful sensation can be increased by pressure on the surrounding region. It is due not only to the rending of the nerve-extremities, but also to the compression exercised upon the same by the effusion of blood and by the inflammatory exudation which soon sets in; it is certain also that the irritating chemical action exercised upon the nervous elements by the products of inflammation explains to a certain degree the intense pain which often accompanies this accident. The leg which is the seat of the lesion is usually carried in advance, with the knee slightly bent and more or less rounded. In action the leg moves as a single piece, the flexion of the knee is very small, and the support is on the toe. It is not rare to see a marked febrile reaction appear at the same time. While the inflammatory phenomena disappear insensibly the effusion of blood is absorbed, but in the great number of cases it is observed that the interstitial exudation condenses and produces at the same time hypertrophy of the tendon; the pain disappears and the animal can walk and trot without showing the least lameness. More often, however, there remains a certain constraint in the gait, and the horse loses its great speed. There are some happy exceptions. A horse of pure English stock in which there was a complete lesion of the perforans, perforatus, and suspensory ligament was afterward excellent for the steeplechase. As to the prognosis, it depends upon the extent and the intensity of the lesion, and especially on the manner in which the horse has been handled after the accident.

Treatment. If the veterinarian is called at the beginning, it is especially important to combat the inflammation and relieve the

pain. Two methods have given the best results, although they are diametrically opposed: hot water on the one hand and irrigation with cold water on the other. If recourse is had to the first method, a quilted bandage should be applied in the region of the metacarpal bone and kept constantly wet with water as hot as possible. The difficulties which are encountered in practice in applying this treatment led to the use of cold water. Where there is a water-supply, a stream of cold water can be conveyed to the metacarpal region by means of a rubber pipe. It is to be remarked that a very strong flow of water is not needed, the stream can be very small, provided that it be a *continuous* one. The good effects are increased by putting ice in the reservoir or barrel from which the water comes in order to make it as cold as possible.

If for any reason this treatment cannot be applied, it may be replaced advantageously by a quilted bandage around the region affected, kept continually wet with an astringent solution, such as water slightly alcoholized, or, better still, 2 per cent. of alum in water containing 5 per cent. of alcohol; tincture of arnica (10 per cent) also gives good results. If the pain is intense and the animal supports itself very little on the leg affected, it is important to support the opposite leg by putting a bandage on the fetlock and on the cannon bone. It is necessary to continue this mode of treatment for the first six or seven days; usually a marked amelioration is noticed at the end of this time. Cure is hastened by having a sort of massage treatment applied to the whole region for twenty minutes twice a day with a salve composed as follows: Mercurial ointment, 50 grams; extract of hemlock, 10 grams; iodide of potassium, 150 centigrams. The reporter has had markedly beneficial results with this treatment when the grooms have had the perseverance and the strength to carry out the massage in a suitable manner. When not certain that the massage will be carried out, I prefer to apply a blister, especially the ointment prescribed by Prof. Degive, and which is frequently used at the clinic in Cureghem: Vaseline (white), 160 grams; corrosive sublimate p., cantharides p., of each, 12 grams. Usually two applications are made at an interval of twelve hours.

If in spite of this treatment congestion still remains with a tendency to become chronic, recourse should be had to cauterization. The fire is applied in an ordinary way, and between the lines the fine points are put, piercing the skin as far as the

subcutaneous cellular tissue. In certain cases the points are allowed to penetrate into the tendon. The results secured have sometimes been surprising; last year cauterization was applied in the manner described to a thoroughbred whose perforans and perforatus were both snapped. The result was so favorable that the horse lately won a brilliant victory at Auteuil, beating a number of excellent French horses. Great importance is attached to the manner in which the horse is used after treatment. In the reporter's opinion each horse should rest at least six months without doing anything; gentle exercise, massage, and cold-water applications being used.

Fracture of the Scapulum. Lately Mr. V. was racing a little thoroughbred mare of remarkable speed, which had carried off thirty-two prizes in 1895, of which twenty-four were firsts. Starting at the end of the group the mare found herself abruptly on three legs; the off foreleg would no longer give support. The jockey had heard at the same time a dry sound analogous to that produced by a club upon a box. Dismounting he discovered a very pronounced congestion of the olecranon muscles and of the region about the shoulder. The reporter saw the animal an hour later and found her suffering extreme pain; the eye fiery, the nostrils dilated, leaping from right to left in the air. She struggled so that he did not succeed in examining her thoroughly, fearing to be knocked down. The congestion pointed to a fracture, but he was compelled to put off his examination until the next day. The mare was supported in slings and applications of cold water on the shoulder ordered. The next morning to my great astonishment I found the mare dead, and it is probable that the animal had succumbed to the unendurable pain. At the autopsy a compound fracture of the shoulder was found. The scapula was literally reduced to bits, especially at the plane of the neck. At least a score of bony pieces was found in the solution of continuity. It is probable that the fracture was not so compound at the beginning; the violent exertion of the animal had caused small supplementary fractures. In this case there was no external wound; the accident happened while the animal was at full gallop.—F. HENDRICKS, in *Annales de Médecine Vétérinaire*, Jan. and Feb. 1896.

MALLEINATION AND TUBERCULINATION IN POINT OF A JUDICIAL EXAMINATION. The practice of malleination and of tuberculation from a judicial point of view is not without importance.

It may be advantageous to consider the two preceding successively :

Malleination. Will an expert who can discover no clinical symptom whatsoever of glanders in the animal examined be justified in concluding the existence of this affection upon the single fact of reaction from mallein? I think not, notwithstanding the positive opinion of Nocard and Roux as to the value of malleination as a means of diagnosis in glanders. In a judicial examination, which has for its aim the establishment of the existence or absence of a defect which prevents the sale of an animal, there is no room for a middle term; the defect exists or it does not exist. In spite of the strongest presumption that glanders is present when the mallein affirms it, the competent administrative authorities in Belgium, as well as in France, in Germany, in Switzerland, and elsewhere, do not consider animals affected with glanders which show no exterior visible symptom of the disease, although they have reacted sufficiently after mallein. These animals are designated as suspected of being affected, and under this head are subjected to suitable sanitary police regulations. The reservation of the authorities has its ground in the lack of success established by certain investigators—Foth, Müller, and others—as well as in the opinion of most of the Russian veterinarians, who are competent to judge, that mallein, such as is in the market at present, has not given results uniformly free from objection. This reservation is all the more justified, as it in no way interferes with the action of the sanitary police, and it agrees perfectly with the proposition adopted by the congress in Berne, in 1895, that “mallein is a powerful means of establishing a diagnosis of the disease in cases of *suspected* glanders”—that is, in the cases where there is some outward visible clinical manifestation. But what ought the expert to conclude in the case supposed? He will simply make a verbal report, reserve his decision until a second examination, and make use of the pound if that has not been already done. In the meantime some one or other external symptom will probably manifest itself, and the expert will then be able to make a certain decision—that is, to declare that the disease is certainly present. He will be enabled to temporize, as he will not have to consider the expense resulting from idleness or the slaughter of the animal, since, having reacted from mallein, it will fall under the application of Article 319 of the Penal Code and of Articles 3 and 60 of the Royal Decision of

September 20, 1883, by virtue of which it must be quarantined for sixty days after malleination, if no external symptom of glanders appears during that period. After this quarantine has ended with a negative result, the expert will be legally justified in concluding that the disease is absent. On the contrary—in case some clinical symptom appears during the period of quarantine—the animal will be killed by order of the authorities, according to Article 8 of the Royal Decision before mentioned. The autopsy will furnish the investigator opportunity to complete his diagnosis.

Tuberculation. Here, as in the case of glanders, a judicial decision is to be given which will be justified by the same considerations as those which were explained in reference to glanders. The same question arises in this place: Can an expert who has obtained a sufficient reaction after tuberculin, in an animal, conscientiously deduce from it that the animal is affected with this disease? Assuredly so, if at the same time some visible symptom of a chronic disease of the lungs is noted. But not, if to the characteristic reaction which tuberculin reveals there is present absolutely no clinical manifestation whatsoever of any deep-seated affection of the lung. Why these contradictory answers, when, in the cases mentioned, tuberculosis will be sufficiently established in accordance with the regulation of October 30, 1895, by virtue of which every animal is considered as affected with tuberculosis which, on the tuberculin-test, presents the characteristic reaction? It makes little difference whether there are visible symptoms coexisting with the reaction, the latter is plainly present and the disease is proved. This statement cannot be refuted if one restricts himself to the definition of the sanitary police. Article 2 of the regulation mentioned above does not permit any equivocation on the subject. Nevertheless it is necessary to remember that the sanitary police make no distinction as to the seat of the malady, whether it be confined to the thorax exclusively or localized in the abdomen; whether it be peritoneal or intestinal makes no difference. The affection exists, the sanitary police simply apply the rule without distinction. But while the sanitary police do not take account of the situation of the disease, it is quite a different matter in regard to a *redhibitory* defect. According to the law relating to tuberculosis, phthisis can only be followed by redhibition if the seat of the disease is upon the pectoral organs of the respiratory apparatus. It makes no difference whether it

has invaded other organs or not. Every doubt ought to be dissipated as to this precise point; tuberculosis, although present in other organs, is only redhibitory when it attacks the intrathoracic organs. It is vain to pretend that abdominal tuberculosis being much more frequently unobserved than tuberculosis of the lungs and pleura, ought at least, under the same head as the last, to be subject to redhibition. The range of a royal decree accepted as a law cannot be extended under the pretext that it does not embrace sufficiently all the cases which it has for its object. If the law is inadequate, it is the business of the government to extend it; and until that time it must be executed in the letter and in the spirit which was given to it when it was enacted. Tuberculation discloses tuberculosis wherever its seat; it may at the time of the judicial investigation be confined to the abdominal cavity, although this seldom happens, while the respiratory organs remain untouched. The investigator would not then be justified in concluding that the defect existed on the basis of a single reaction producing a rise in temperature of at least 1.4° above the normal. What is the obligation of the expert then in a similar case—that is to say, when the presence of tuberculosis is confirmed by tuberculin reaction without the seat of the disease being determined? In view of the buyer who demands it or of the judge who has commissioned him, the expert should have the animal in question put into quarantine and reserve final decision, as in the case of glanders which had alone been detected by malleination. As in the case of glanders, there need be no fear here of the losses resulting from the sequestration of the animal, for it must be quarantined as soon as it has reacted, in conformity to Article 18 of the law of October 30, 1895, concerning tuberculosis. In the meantime some clinical manifestation revealing lesions in the chest will probably appear, and an absolute decision affirming the existence of the defect can be legally made. In view of the authorities the judicial expert will have to acquit himself of the obligation imposed by Article 10 of the aforementioned law; he must then notify the official inspector of the district, who will make further disposition of the matter.—*Annales de Méd. Vétérinaire*, Jan. and Feb. 1896.

STATISTICS ON THE FREQUENCY OF NEOPLASMS IN THE DOG. The number of dogs treated at the veterinary school in Berlin by Prof. Fröhner, as well as in the hospitals and in daily prac-

tice, reached a total of 60,471 for the period of 1886-94. From the number he removed 2871 tumors, about 5 per cent. of the general sickness. The exact nature of these tumors has only been determined in the cases treated at the veterinary school, for the diagnosis of neoplasms require, as a rule a microscopic examination, except for the fibromas, papillomas, lipomas, cysts, etc., whose histological characteristics are visible to the naked eye. Of the 643 tumors which were operated and analyzed, Fröhner gives the following statistics:

	Per cent. of all tumors.		Per cent. of all tumors.
262 cancers	= 40	16 mucous cysts	= 2.5
97 fibromas	= 13	14 goitres	= 2.2
65 papillomas	= 10	9 ranulas	= 1.4
44 sarcomas	= 7	7 atheromas	= 1
39 lipomas	= 6	4 dermatoids	= 0.6
17 polyps of the vagina	= 2.6	2 angiomas	= 0.3

The same proportion held good in the 2228 tumors observed at the polyclinic. It follows that the frequency of cancer in the dog, 4 per cent. of all the tumors, is greater than was supposed.—Abstract of an article in the *Annales de Médecine Vétérinaire* (Jan., Feb., 1896), from the *Monatsheft für prak. Thierheilkunde*, B. vi. H. 1, 2, and 3.

ARECOLINE, A NEW REMEDY AGAINST ACUTE FOUNDER. Fröhner used this remedy in 12 cases of acute founder with good effect. He says the symptoms disappear rapidly, even in patients which had been bled without result. Arecoline is said to act in a similar way to pilocarpine and bleeding, but more powerfully, and, moreover, is cheaper. The dose is 0.8 to 0.10 centigrams hypodermically injected, repeated daily as long as it seems necessary. Fröhner never administered it longer than seven days. According to him, this drug causes the distribution of the blood in the organism and stimulates the action of the salivary, intestinal, and sweat glands, and brings about a depletion of the system.—*Monatsheft für prak. Thierheilkunde*, vol. i., copied in *Tijdschrift voor Veeartsenijkunde*, Jan. 1896.

TREATMENT OF COLIC WITH CHLORIDE OF BARIUM.¹ Referring further to the treatment of colic in horses with the salts of arecolin and chloride of barium, further experiments with this

¹ Translated by Otto Noack, Veterinarian, Reading, Pa.

latter agent on a number of cases large enough to satisfy myself of its claimed therapeutic result as announced by Dieckerhoff. At the meeting on December 12th Mr. Moller-can reported three unfortunate cases out of a total of thirty-eight injections, and in these cases it is necessary to acknowledge the product injected into the blood seems to have caused the deaths.

Mr. Ries, of Luxembürg, an old pupil of the College of Alfort, has left it to me to report to you a new case of intoxication from a small dose of chloride of barium. The following is the note of Mr. Ries: "Having read the work of Dieckerhoff on using the chloride of barium for treatment of colics, I have tried to instruct myself on the question to know to what extent this salt is used in medicine. It figures in the old German *Pharmacopœia* among the number of inoffensive or little energetic medicaments. In the last edition of said *Pharmacopœia* it is not mentioned at all. Hager (1876) said the authors of the *Pharmacopœia Germanica* did not know the numerous deadly intoxications caused by this salt; he shows plainly the *Pharmacopœia* indicates too strong doses. The use of chloride of barium has been in preparations for the destruction of mice and rats. Hager adds, chloride of barium belongs to the group of the acrid toxins. This agent produces death by cardiac syncope. It was used against scrofula, in certain affections of the eyes, in chronic orchitis. To-day it is completely abandoned.

"This is what I learned about this salt since you have made your communication to the Société Centrale de Médecine Vétérinaire. This communication confirmed the remarkable tolerance of the organism of the horse in regard to this heart-poison, even when the chloride was administered in intravenous injection.

"On December 6th, 3.30 P.M., a gelding of heavy build, seven years old, was brought to me affected with colic. This horse had never been sick. He had just travelled about six and a half English miles at a walk, pulling a cart, not heavily loaded. He had been used immediately after his meal. Arrived at his destination he was placed in the stable of the inn. Half an hour later the proprietor noticed the colic, and had the horse immediately sent to me.

"*Symptoms.*—Patient lays down carefully; don't roll much; the abdomen is not distended; the conjunctiva normal in

aspect; heart and pulse functions regular, only a slight acceleration at the moment of the attack.

“*Diagnosis.*—Acute indigestion.

“*Treatment.*—A bottle of coffee is immediately administered. At four o'clock he gets a calming drench (tincture of opium, tincture of asafoetida). At 4.30 P.M. I give an injection of fifty centigrammes of morphine. The patient lays down and sleeps three-quarters of an hour. At five o'clock the colic returns as before. The general state has remained the same. Eserine is indicated; patient by no means exhausted, not even tired. Pulse remains normal. Hesitated to try the chloride of barium because of mistrust one has in using medicaments which we do not know. I recommend to the pharmacist to boil and filter the solution. During this time I prepare the Pravaz syringe as for vaccinations (new piston, the other parts are boiled and perfectly cleansed). Not to neglect any precaution I shave the skin at the point where the injection has to be made and wash it with carbolized water. The empty needle had produced a small jet of blood. The syringe did not contain one air-bubble. I injected fifty centigrammes of chloride of barium in solution. At the same time I draw the needle back, lay down the instruments, the patient staggers, totters, tumbles down behind, falls like a mast, and dies almost immediately. I had sustained artificial respiration with the assistance of a helper. Under the influence of the methodical compressions of the thorax, of the rising and stretching of the upturned front leg, the air could be heard entering and leaving the thoracic cavity, and that lasting a quarter of an hour. Life was extinct.

“*Autopsy.*—Overloading of stomach without a rent in the walls. Cavities of the heart filled with thick blood-clots.

“Whether to attribute this death to a small dose of chloride, to the preliminary administration of morphine, to the continuance of colic, to a peculiar state of the heart, to an abnormal sensitiveness of the patient, I do not know.”

I would repeat that during the three months which have preceded my first communication we had treated in Alfort thirty-two horses affected with colic, varying the doses according to the weight of the subjects and the nature of colic, without producing a case of deadly intoxication; but none of the sick ones had exhibited alarming conditions. Mr. Almy and myself continued this medication, observing all the time the indication, injecting only small doses to sick ones showing grave circu-

latory troubles. Some unfortunate facts which I have mentioned compelled us to act in this way; but it was necessary for one part of these sick ones—for those which were brought at night and have been treated by the students on duty—to obey this indication. However, up to the present time we have not had a case of death attributable to the chloride of barium, and have been well pleased with the same. In the number of January 3d the *Berliner Thierärztliche Wochenschrift* records the results of the use of the chloride of barium at the college at Berlin for the last four months of 1895. Out of one hundred and thirty-nine horses affected with colic and treated with this agent, twelve have died (8.6 per cent.). In seven torsion of the colon was found; in two volvulus of the small intestines; in one strangulation of the small intestines with the epiploon; in another a strangulation of the intestine in the hiatus of Winslow; another with lesions of acute enteroperitonitis. Not one death through the action of chloride of barium. According to this new note, Brass insists upon the importance of the dosage. If the heart is already badly affected, if the pulse is much accelerated and feeble, it is necessary to keep up small injections, half of the ordinary doses. He claims that the small doses of chloride of barium produce more rapid and more wholesome effects than the other therapeutic agents which are warmly advocated at the present time.—CADIOT, in *Revue de Médecine Vétérinaire, Bulletin de la Société Centrale de Médecine Vétérinaire, Meeting February 27, 1896*.

SEPTICÆMIA HÆMORRHAGICA. D. J. Fisher (*De Veeartsenijkundige Bladen*, vol. ix. No. 3) describes under this name an epidemic which in the departments Buitenzorg and Meester Cornelis (in Dutch East India) carried off 658 buffaloes within seven months. It was asserted some time ago by Dr. van Eecke that the cattle-plague, peculiar to the so-called wild animals, and cattle epidemics often occurred in India; from the communication of Fisher it seems that this disease is indigenous in the districts mentioned.

It occurs in three forms: 1, the pectoral; 2, exanthematic; and, 3, the intestinal form. Often all three forms are present at the same time. The buffaloes suffered from tympanites (flatulent distention of the belly), with disturbed defecation and urination; in some cases diarrhœa was present. Respiration was

frequent and painful. In other cases there was noticed extended swelling of the skin and subcuticle on the abdomen, breast, lower part of the neck, and a part of the legs; the eyeball was sunk in, the conjunctiva hyperæmic, the nose arid, the anus often open. The animals were always sleepy, refused all food, had high temperatures, and a painful and rapid respiration. In the pectoral and intestinal form at the post-mortem there were found a strong injection of the bloodvessels of the skin and minute hemorrhages in the subcuticle penetrating between the muscles. In the cavity of the chest there was much serofibrinous fluid, the whole surface of the pleura with the exception of the pleura phrenica was covered with a serofibrinous layer 3 cm. thick, which, after draining off the fluid, was only 1 mm. thick. The lungs were black-red, spotted or striped, not fallen together, soft, and easily torn, at which blood and the aforementioned fluid flowed off. The interstitial tissue, from 2 mm. to 1½ cm. in thickness, was strongly spotted, so that the lungs had a marble-like appearance. The tracheal and bronchial mucous membranes were likewise darkly colored or striped and covered with a foul layer of mucous. The pericardium, as a rule, contained little fluid, the wall of the heart was flaggy, and extended fibrinous coagulations were present in the heart.

The "rumen" (upper stomach of animals that chew the cud) was filled with dry food; here and there, through loss of epithelium, eroded and inflamed spots were found. The mucous membrane of the stomach (rennet) and intestines was dark-red, spotted, but without erosion. The Peyer glands were not especially swollen or areolated; the peritoneum was strongly injected; the liver was of normal size, but dark and soft; the gall-bladder was full and spotted red, the head of the spleen likewise, but otherwise normal; the kidneys plethoric and spotted black.

In the exanthematic form a fluid flowed out of the scarified and diseased parts of the skin corresponding to that in the cavity of the stomach; the subcuticle and the muscular tissue on the parts mentioned was saturated with this fluid matter, sometimes to the thickness of 10 cm. There were hemorrhages on the surfaces of the same. The whole was without odor. The lungs were in some cases unaffected, now and again hyperæmic; nose, mouth, and throat were considerably inflamed, as well as the mucous membrane of the genitalia. The intestinal changes were the same as those described above.

The contagion spread from east to west, but not in the

direction of the migration of the animals, which is from south to north. Fisher thinks that the wind had no influence on the spread of the disease, because great springs or leaps were often observed in its appearance. Just as little can the surface water be responsible, inasmuch as the disease arose at a dry season. The course of the rivers cannot serve as an explanation. The writer must leave the question unanswered how the disease arose and spread. The result of the inoculations made was not given. —W. C. S. in January *Tijdsch. voor Veeartsenijkunde*, etc.

A SERIES of articles are appearing in the current issues of the *Breeder's Gazette* on "Infectious Abortion in Cattle." They are written by a Mr. William Watson, a breeder. In the issue of May 13th the tenor of his whole claim as to the causation lies in the manure-piles and the drainings therefrom being taken into the affected animal's system.

A second writer on the same subject claims to have had very satisfactory results in feeding powdered gum-asafœtida in one to two tablespoonful doses, three times daily, where any evidence of aborting was present or where animals in previous years had aborted.

Germany demands more rigid inspection of American meat-products, because of its asserted admixture in transit with the meat-products of other countries. What next?

The second examination of the Pennsylvania State Board of Veterinary Medical Examiners proved a much more satisfactory one than the first one, and was very gratifying to the Board in that they were able to place their seal of approval on about 85 per cent. of the applicants.

Iodide of potash, in one-drachm doses three times daily, has almost completely reduced a schirrous cord with fistulous openings, from which a fetid discharge constantly emerged. Washing the parts locally with warm water lightly charged with creolin aided the rapid improvement at the Philadelphia Veterinary Sanitarium.

Dr. H. Walters, of Wilkesbarre, reports very satisfactory results with median neurotomy for ringbone. Out of over forty operated upon, but a small number have proven unsuccessful in removing entirely or greatly reducing the lameness.

REPORTS OF CASES.

INTESTINAL OBSTRUCTION IN A COLT.

BY R. P. LYMAN, M.D.V.,
HARTFORD, CONN.

My attention was recently occupied by a case which may possibly be of interest to readers of the JOURNAL, and one which I am led to consider of rather rare occurrence. I was summoned hurriedly to attend a colt, not yet three weeks old, that was exhibiting severe signs of abdominal pain.

On my arrival I found the little fellow prostrated, apparently too weak to rise, breathing heavily, and covered with a cold sweat. On inquiry I learned that he had not done well since he was foaled, although he had never been backward about feeding; he was dumpish, thin, and had a dull, staring coat. Just previous to my arrival he had been very violent in his demonstrations of abdominal disorders, biting his flanks, rolling, crying, sweating, and, in short, expressing all colicky symptoms. By examination and history I diagnosed a stoppage of the bowels, accompanied with a collection of abdominal fluid. Prognosis was unfavorable, in fact he was then in a dying condition. Treatment was administered to no avail, the colt dying in half an hour.

Upon post-mortem, when I opened the abdomen a considerable quantity of greenish-yellow fluid, holding in suspension yellowish flaky particles, was liberated. The bowels were injected throughout; tracing toward the anterior I encountered an enlargement which proved to be a portion of intestine that had telescoped within another; anterior to this was a large collection of fecal material encased in the bluish-black bowel and presenting anteriorly considerable gangrene of the intestine leading from the stomach. Upon the telescoped portion I incised a watery cyst about the size of a hen's egg and entirely obstructing the alimentary passage.

The case showed evidences of extended duration, and, coupled with its history, it is fair to suppose the pathological condition was of congenital origin suddenly made acute by the accumulated alimentary matters.

PARALYSIS IN A LION.

BY CECIL FRENCH, D.V.S.,
WASHINGTON, D. C.

THE proprietor of a travelling menagerie temporarily located in Washington recently sought my services for the relief of a male lion, aged about ten months. The condition was one of almost complete paralysis. The jaws and throat were the only organs over which he seemed to have control. The former were mostly opened, though he would occasionally close them, whilst the latter he moved continuously as if in the act of swallowing. The rectal temperature varied that day from 101.5° to 100.3° . Pulse ranged from 130 to 120. Smith's *Physiology of the Domestic Animals* gives a table compiled by Colin, in which the frequency of the pulse of the lion is placed at 40, that of the lioness at 68. In order to verify these citations I obtained both temperature and pulse-rate in a healthy male and female of the same litter, which were as follows: Male (ten months), pulse 110; temperature 100° . Female (ten months), pulse 120; temperature 102° . The observations were repeated with almost similar results and with due regard to absence of excitement. Making necessary allowance for difference in rate according to age (a lion is mature at seven years) there would seem to be considerable discrepancy between these tables.

I suspected the presence of intestinal parasites, and accordingly administered with some difficulty 10 grains of santonin. I was unable to make a visit the next day, but on that following was told by the proprietor and attendants that "millions of maggots had been passed, some living, but most of them dead, and that they resembled those infesting cheese." None had been preserved and a further dose did not bring any more away. Being a little dubious of this statement I procured from another lion some ascarides and asked if there was any resemblance. They were positive there was none, and then went on to describe them as being "whitish, with slightly colored head, short, thick body, and some had crawled about the host's body after excretion."

From other explanations and remembering that santonin had little if any effect on tapeworm, I excluded proglottides from consideration. I then asked to be shown the meat that was

being fed. This I found considerably fly-blown, and they told me that it was often in that condition.

I therefore came somewhat unwillingly to the conclusion that the paralysis had been brought about reflexly by an obstruction of fly-maggots hatched after ingestion of fly-blown meat or by absorption of ptomaines secreted by the same. At any rate, from the day the animal was delivered of the pest he commenced to steadily improve, and a fortnight later began to make the administration of his medicine—extract of *nux vomica* in 1-grain doses, twice daily—a lively matter. I inquired of Dr. Howard, entomologist at the Bureau of Animal Industry, his opinion as to the veracity of the statements from the men and the possibility of the phenomenon. He was of opinion that hatching and development of the larvæ could take place under the conditions described.

NERVE-SUTURING.

BY W. E. A. WYMAN, V.S.,

CLEMSON AGRICULTURAL COLLEGE AND SOUTH CAROLINA EXPERIMENT STATION.

SOME time ago the writer was called to see a filly which, in a runaway, had struck the side of her head against an oak post, and was bleeding to death. On arrival, a wound about six inches in length, extending from the inferior border of the temporal muscle to the middle of the masseter, a copious hemorrhage from that wound, and the upper lip drawn over to the left side were noticed. As the animal was of a very excitable disposition, she was thrown down, the examination revealing the following facts: The zygomatic arch was crushed to an extent of about one inch, this fracture being about in the middle of the arch. The transverse facial artery and vein were severed and the facial nerve completely cut in two, and some fibres of the uppermost layer of the masseter torn across. All this in line with the fractured portion of the zygomatic arch. After ligating the bloodvessels the writer irrigated the wound for about five minutes with a 1:8000 bichloride of mercury solution; next removed all the splinters of bone and also a little of each side of the compound fracture of the zygomatic arch, as the edges after removal of the bony splinters appeared distinctly serrated. The torn fibres of the masseter were snipped off and

the wound irrigated once more with the mercury solution. The facial nerve was sutured with very fine catgut, an effort being made to get the stitches into the connective tissue holding the little bundle of nerve-fibres together. The whole wound was irrigated once more, all moisture removed with "tupfers" as far as possible, and the whole wound thickly dusted with acetanilid-iodoform-tannin, 1 : 1 : 3.

Of course, all the instruments as well as everything coming in contact with the wound had been sterilized previously, and the irrigations used in order to change the infected wound if possible into an aseptic one. The animal was kept tied up for one week ; at the fifth day the upper lip had regained its tonicity to such an extent that only the experienced eye could detect a slight deviation toward the left. The filly made an uneventful recovery, being at work eighteen days after the runaway.

URETHRAL CALCULUS IN A STEER.

DR. V. P. SMITH, of Jamestown, Ohio, reports the case of a yearling steer, on April 22d, suffering from severe colicky symptoms, lying on its side, moaning, kicking at its side, rising, and lying down every few minutes. Suspecting from a similar case cystic calculus, examination was made, but failed to reveal the presence of any. Having been turned to grass a few days before, I administered purgatives in conjunction with opiates and stimulants. Owner reported calf all right the following day and purging. The animal was afterward turned to grass again, but was noted not to eat much, and on May 3d was subject to another attack similar to the first ; treatment same as before, but the calf died on the morning of the 5th.

Autopsy. Abdominal cavity contained a large quantity of fluid which proved to be urine ; bladder ruptured on lower surface and wall thin ; upper wall thickened and inner surface showing inflammatory lesions. The urethral canal showed the presence of a calculus in the lower curvature of the penis. Small intestine was twisted, which probably arose during the violent movements of the animal and prevented external manifestation of the action of the physic, though the contents of stomach were fluid.

EDITORIAL.

THE SLOWER METHOD THE TRUER ONE.

WITH the rapid pace in all things the Americans have learned to go fast in one direction that is neither safe, wise, nor well. The inconsiderate creation of professorships and professors has been too rapid and untenable to longer continue, and the need of returning to the slower and truer methods, too forcibly facing us, to longer continue in the same dangerous pathway, must now be accepted as a duty to be religiously performed. The appointing of men without experience, training, or special equipment to professorships, when these honors should only cloak the shoulders of those who, by years of teaching, special preparation, and meritorious work of a high character, commanded them, has had its culmination in the hot-bed system of turning out from our veterinary colleges half-equipped, half-educated, untrained, and unsafe veterinarians to assume the responsibilities that fall to the lot of the practitioner in every community.

Honors that come so easily rest with little conception of the grave responsibilities such places and positions should carry in their train on the shoulders of those who wear them. The multiplication of veterinary colleges and the eagerness of local veterinarians to pose as professors for local celebrity and personal gain have been fruitful evils that have already cost us years of labor, of earnest thought, and solicitude to correct, and placed every association in the country on the defensive to shelter and protect their members from severe criticism and ridicule, because they were graduates of schools maintained on this basis. Censure that in most instances was well deserved. We therefore urge our readers to use their influence that this danger may not continue. Above all, let every man to whom the tempting allurements of a professorship is held forth consider well his own fitness for such a place. It is not to be determined upon the basis that he believes himself as well equipped or even better than some one he knows who fills a similar place in some college faculty. The true student, the earnest veterinarian of deep conviction, will fully realize how empty such an honor must be when once accepted, and will appreciate how great

the duties, how grave the responsibilities which, when only half discharged, must bring ridicule and disappointment.

HALT THE DANGEROUS FARCE!

ADOPT THIS MEASURE IN THE SMOKY CITY.

AN ideal ordinance¹ for the regulation and control of the milk traffic of Pittsburg has been introduced in the Councils of that city, and its many excellent features should win for it the support of every milk-consumer of the entire city.

At first reading one might be led to think that it imposes unreasonable restrictions upon the producers; but this is only apparent, not real, and has its force only from the fact that we have so long been tolerant in allowing this raw food product to come to us unquestioned and unchallenged; while we have been straining our efforts to avoid, by cooking and other measures, certain dangers possessed by our drinking water and foods that bear only an insignificant comparison to milk as a dangerous food product in itself when used as a raw production, and which by its remarkable susceptibility to invasion by germs and other impurities fills the rôle of a vehicle of transmission, aside from the fact that we have remained in blissful ignorance of the physical condition of the animals producing our milk-supply, as well as the absolute lack in many instances of a single sanitary safeguard. The wealth of general information now before our people on this all-important topic makes it nothing short of criminal to permit the existing conditions to hold on a day longer than the time required to put into execution measures to control and remove these far-reaching dangers. Every veterinarian in Pennsylvania should give this his unselfish and unqualified support.

Let the good work go on.

TRIUMPHANT MASSACHUSETTS.

THE sober second thought of an intelligent and thinking people generally proves sound and trustworthy, and the outcome of the thorough open discussion of the whole subject of tuberculosis and its every aspect and phase from the point of view of the Tuberculosis Commission of the Bay State has won

¹ Published on page 558.

for the people of that Commonwealth the most significant and far-reaching victory achieved in the past ten years. The appropriation asked for the present year to continue the good work (being done there for the whole world) was raised fifty thousand dollars above the original appropriation asked for, and the commission will have at its command three hundred thousand dollars, which we are fully sure will bring more than that measure of benefit to the people of Massachusetts, not to mention the great benefits indirectly derived by the progressive people the world over. This tribute to the worth of a commission whose zeal and efforts have been of the most earnest, sincere, and intelligent character must come to them as a solace and comfort, after the smoke and fury of the battle have passed away. While it places a greater responsibility than ever upon their shoulders, none who are acquainted with the high character of the men comprising the commission will not for a moment have the slightest fear or anxiety that these higher and graver duties will be discharged with the same fidelity and faithfulness as in the past. All honor to the legislative servants of the people of Massachusetts! All praise to the confidence reposed in her commission, and well done to these good and faithful servants, who, while working within the confines of a State, are nevertheless doing the world's work!

A lesson for every commonwealth to study.

NOW FOR THE QUEEN CITY OF THE LAKES.

On other pages will be found a synopsis of the programme for our Buffalo meeting in September next, and it is sufficiently well advanced to offer something to attract every veterinarian throughout the country. Its variety of subjects, not to mention the one great field of sanitary work and its branches of milk- and meat-inspection, toward which every eye is turned and which commands the attention of every veterinarian, because he knows not the day or the hour he may be called to fill a post of this character in his town or city, must bring to this convention an unusual attendance. These subjects are so new in a sense that the text-books of ten years ago are of little value now, and this progress is added to day by day, so that one is compelled to mingle with the most progressive spirits of this great movement to be able to properly advise with and counsel his people

in measures destined to wisely control and care for these interests. The work of Secretary Stewart is well in hand, and every means to make this the best meeting in our Association's history are being put in force by him and must command the hearty co-operation of every member.

A welcome to all at Buffalo.

CONTROL WORK.

New Jersey. Thoroughbred cattle to the value of six hundred dollars were recently destroyed at Stewartsville by the New Jersey Tuberculosis Commission.

Pennsylvania. A herd at Economy, in this State, have shown some discrepancies in the second test, which has given rise to some differences of opinion among the examining veterinarians as to the relative value of the preparations of tuberculin used for diagnostic purposes. It seems to be another instance where a second test revealed a smaller number of cases as indicated by the reactions, which is quite in keeping with the more extended knowledge we are gaining of these agents used for diagnostic purposes, but which seem to have some additional value as curative or palliative influences for a variable period of time.

A herd of fourteen cattle condemned as tuberculous were recently destroyed near Doylestown, Bucks County, under directions of the State Live-stock Sanitary Board.

Australia. Queensland has adopted measures to limit the ravages of Texas fever by dipping the cattle in an iron solution for the destruction of the ticks. Another method, claimed to be very effective in destroying these parasites, is the use of a mixture applied with brushes and brooms.

Canada. Veterinarian W. B. Campbell, of Berlin, Ontario, reports an outbreak of contagious garget in a herd of cattle in his district. Two of these animals were affected within twelve hours of each other. They were in bank barns, poorly ventilated, no separation of the animals, many of the roots fed stored in the same place. Directly in front of the cows twenty hogs were kept. A large percentage of the herd of twelve were affected. Under saline purges, fomentations, camphor liniment, and the use of the siphon, they yielded tardily to treatment.

LEGISLATION.

PENNSYLVANIA.

An Ideal Ordinance Regulating the Milk-supply. An ordinance prohibiting the sale of adulterated, unwholesome, or impure milk in the city of Pittsburg; regulating the sale and traffic in milk; providing for the licensing of persons, firms, or corporations dealing therein; the making of examinations and tests of animals producing milk, and fixing penalties for violations of this ordinance.

SECTION 1. *Be it ordained and enacted by the city of Pittsburg in Select and Common Councils assembled, and it is hereby ordained and enacted by the authority of the same, that whoever by himself, or by his servant or agent or as the servant or agent of any person, firm, or corporation, sells, exchanges, or delivers, or has in his or their custody or possession with intent to sell, exchange, or deliver, or exposes or offers for sale as pure milk, any milk from which the cream or any part thereof has been removed, or which has been adulterated, or changed in any respect by the addition of water or other substance, shall be liable to the penalties hereinafter provided in this ordinance.*

SEC. 2. No dealer in milk and no servant or agent of such dealer, firm, or corporation shall sell, exchange, or deliver, or have in his or their custody or possession with intent to sell, exchange, or deliver, milk from which the cream or any part thereof have been removed, unless, in a conspicuous place above the centre, on the outside of each vessel, can, or package, from or in which such milk is sold, conveyed, or delivered, the words "Skimmed Milk" are permanently soldered in metallic letters not less than one inch in length, the said can, vessel, or package to be painted or japanned a bright blue color. Whoever violates the provisions of this section shall be liable to the penalties hereinafter provided in this ordinance.

SEC. 3. No person, firm, or corporation shall sell, exchange, or deliver, or have in his or their custody or possession with intent to sell, exchange, or deliver, skimmed milk containing less than nine (9) per cent. of the milk solids, exclusive of butter fat. Whoever violates the provisions of this section shall be liable to the penalties hereinafter provided in this ordinance.

SEC. 4. That every person, firm, or corporation who shall sell or offer for sale, or who shall transport or carry for the purpose of sale, or shall have in his or their possession with intent to sell, any impure, adulterated, or unwholesome milk, and every person, firm, or corporation who shall adulterate milk, or who shall keep animals for the production of milk in a crowded or unhealthy condition, or unsanitary premises, or feed the same on food that produces impure, diseased, or unwholesome milk, or who shall feed said animals on distillery waste, usually called "swill," or upon any substance in a state of putrefaction or rotteness, or upon any other substance of an unwholesome nature, or who shall not allow said animals free

movement in the open air at pasture at least six hours each day, shall be liable to the penalties provided in this ordinance.

SEC. 5. That the addition of water, ice, or any other substance or thing to milk is hereby declared to be an adulteration, and milk that is obtained from animals that are fed on distillery waste, usually called "swill," or upon any substance in a state of putrefaction or rottenness, or upon any substance of an unwholesome nature, or milk that has been exposed to or is infected by the emanations, discharges, or exhalations from persons or animals having any contagious disease by which the health or life of any person or animal may be endangered, or milk from tuberculous animals, or animals suffering from any febrile disease, is hereby declared to be impure and unwholesome.

SEC. 6. No person, firm, or corporation shall sell, exchange, or deliver, or transport, or have in his, her, or their possession for the purpose of sale any milk which contains more than eighty-seven and fifty (87.50) one hundredths per centum of water and less fat than three (3) per centum, and the specific gravity of which at sixty (60) degrees Fahrenheit is not between one and twenty-nine (1.029) one thousandths and one and thirty-three (1.033) one thousandths, and all milk of lower grade or quality than is established by this section shall be deemed and taken and is hereby declared to be adulterated and impure within the meaning of this ordinance.

SEC. 7. On and after the expiration of thirty days from the passage and approval of this ordinance, for all milk brought into or offered for sale in the city of Pittsburg, satisfactory evidence must be furnished to the Bureau of Health, by the producers or dealers in said milk at their own cost and expense, that said milk has been produced by healthy animals, and especially that they are free from tuberculosis; which conditions of health shall be determined by examinations and tuberculin-tests to be made by a veterinarian who is satisfactory to the State Live-stock Sanitary Board and the Superintendent of the Bureau of Health. After said examinations and tests have been made the veterinarian shall place upon each animal found by him to be in a healthy condition an ear tag, to be furnished by the Bureau of Health, and also furnish to said bureau a certificate, upon a form to be issued by it, setting forth that each of said animals, describing the same, is free from disease, is being properly fed, and that the premises occupied by them are in good sanitary condition, which examinations and tests shall be required and certificates furnished regarding each and every additional animal purchased or secured by said producers, thereafter. Subsequent examinations, tests, and certificates as aforesaid may be required by the superintendent of said bureau whenever in his opinion, based upon reliable information, any of said animals are in an unhealthy condition or the premises occupied by them are in an unsanitary state.

SEC. 8. The Superintendent of the Bureau of Health shall, on or before the first day of September of each year, license all persons, firms, or corporations who convey milk in wagons or otherwise for the purpose of selling the same within the city of Pittsburg, said license to be renewed annually. He shall also keep a record of their names, residences, places of business, number of wagons or other vehicles used for the purpose, and the number of the license. The latter, together with the name of the owner, and the number of the wagon or vehicle shall be legibly painted on each outer side of all wagons or vehicles used in the conveyance or sale of milk, in letters

not less than two inches in height. Said superintendent shall also annually license and register every person, firm, or corporation selling or offering milk for sale in a store, stand, or market-place within the city, which license shall be displayed conspicuously in said place of business. The dealer or vender shall upon the written order of the Superintendent of the Bureau of Health pay into the city treasury the sum of one dollar and receive therefor a receipt, presentation of which at the office of the Bureau of Health shall entitle said person, firm, or corporation to a license; provided that all the provisions and requirements of this ordinance have been complied with.

SEC. 9. Every person, firm, or corporation engaged or desiring to engage in the sale of milk as aforesaid shall make written application to the Bureau of Health, upon blank forms to be furnished by said bureau, asking that a license be issued, authorizing the same.

SEC. 10. That any person, firm, or corporation who shall engage in or continue the sale of milk in said city without first having obtained such license or who shall violate or fail to comply with any of the provisions of this ordinance shall be liable to a penalty not exceeding fifty (50) dollars for the first offense, and a penalty of fifty (50) dollars for a second or any subsequent offense, to be sued for in the corporate name of the city of Pittsburg, and recovered in the manner provided for the recovery of debts or penalties of like amount.

SEC. 11. In addition to the penalties mentioned and provided in the foregoing section, the Superintendent of the Bureau of Health may, by and with the consent and approval of the Director of the Department of Public Safety, revoke the license issued to the said person, firm, or corporation so offending, which license shall not be renewed or reissued during a period of one year thereafter.

SEC. 12. That any ordinance or part of ordinance conflicting with the provisions of this ordinance be, and the same is hereby repealed so far as the same affects this ordinance.

New York.—The master shoers of New York have succeeded in having their bill passed through the State Legislature and signed by the Governor. Already the New York County Veterinary Medical Association has recommended Dr. H. D. Gill as one of the Board, and his appointment has been favorably indorsed by the Master Shoers of New York County. This is the first bill of the kind engrafted upon the statutes of any of the States, and much good is expected from it in the way of better educated master shoers.

Dr. Gill is one of the editors of the JOURNAL, and is specially well equipped to fill the rôle of examiner.

National.—Senate Bill No. 1552, destined to retard scientific medical and surgical progress by imposing unnecessary and uncalled-for restrictions on experimental work among the lower animals, remained on the Senate calendar at the close of Con-

gress. It will, therefore, take precedence in the next session of Congress, and it behooves all true votaries of advance along the line of progress in the medical world to use their influence with their representatives in both branches of Congress to defeat this measure.

Write your Senators and Representatives from every district.

Oregon.—Oregon is second in the list with a law regulating the practice of the shoeing art, and a board consisting of three veterinary surgeons and two master horseshoers will examine all future applicants who wish to ply this vocation in this State.

District of Columbia.—The bill destined to secure for the District of Columbia a Board of Veterinary Examiners, and requiring registration upon all practitioners in the District, failed to pass at the recent session of Congress.

AMONG THE COLLEGES.

VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

THE twenty-fourth commencement of the Veterinary Department was held on Thursday, June 11th, at 12 noon, in the Academy of Music, Philadelphia. The large hall was filled with the friends of the graduates of the several departments. Beale's Naval Battalion Band discoursed enlivening music throughout the exercises, and added much to the enjoyment of the occasion. The provost, trustees, faculties, invited guests, and graduating classes, attired in the adopted caps and gowns, marched upon the stage promptly at 12 noon. Prayer was offered, invoking a blessing upon the university, its staff of officers, graduates and students, in impressive language, by the Rev. H. C. McCook, D.D.

Some sixteen graduates received the degree of V.M.D., among them a graduate of the Veterinary Department of Ames, Iowa, and a practising veterinarian of some years' standing.

The following is the list of graduates:

Frederick deM. Bertram, Herman A. Christmann, Gilbert G. Drummond, Charles M. Frantz, Walter W. Gardiner, Charles M. Heberton, Levi Johnson, Leroy M. Land, V.S., Richard R. Mahaffy, Henry D. Martien, Charles H. Miller, John R. Mohler, A.B., F. Sidney Roop, D.V.M., Daniel G. Shumway, Arthur H. Streeter, A.B.

Dr. John R. Mohler, A.B., of the graduating class, received the J. B. Lipincott prize of one hundred dollars, having attained the highest general average in his examinations during his three years' studies.

The prize of an écraseur, offered by a friend of the department to the mem-

ber of the second-year class passing the best examination in veterinary anatomy was awarded to W. J. Storm.

The exercises were concluded by a banquet at Reisser's Café in the evening, where many of the older graduates commingled with those of the class of '96, and listened to words of wisdom, wit, and history with a deal of enjoyment. Among those who responded to toasts were Dean Marshall, Profs. Adams, Conard, and Formad, City Veterinarian Hart, Dr. Conrow, and members of the several classes. Among the out-of-town alumni present were noted Drs. Lacock, of Allegheny; Conard, of West Grove; Conrow, of Burlington, N. J.; Turner, of Lahaska; Dilks, of New Jersey; Underhill, of Media; and a number of others. Profs. Pearson and Harger were much missed, both of whom were unable to participate in the festivities.

MCKILLIP VETERINARY COLLEGE, in its announcement for the coming collegiate year, will have added to her corps of teachers as Professor of Physiology, E. M. Reading, A.M., M.D., succeeding J. H. Honan, D.V.S., M.D., resigned. E. M. Broeckin, V.M.D., will fill the Chair of Histology and Microtechnology. Elmer E. Critchfield, western editor of the *National Stockman and Farmer*, has been added to the staff of teachers on Breeding and Hygiene. Its introductory pages strongly testify its unqualified belief in a three-years' course. The lecture fees have been reduced from one hundred to seventy-five dollars each year. An outline of the entire course, examinations, buildings, etc., is given in the catalogue, with illustrations of the various rooms, laboratories, and hospital wards.

THE VETERINARY DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA, not having any students who had spent the prescribed term of three years, closed its session without any exercises. Some fourteen students were in attendance at the several courses during the past year.

THE COLLEGE OF AGRICULTURE AND MECHANICAL ARTS, associated with which at Kingston, R. I., is the State experiment station, provides for its agricultural students a course in veterinary science, but there seems, from the annual report, to be no veterinarian connected with the college faculty or the experiment station. Rhode Island has a number of highly intelligent and well-educated veterinarians, and it would seem right and proper that one of these should be associated with such an important State institution.

MARRIAGES. At Trinity Church, Chicago, Ill., April 30th, by the Rev. John Rouse, Dr. A. H. Baker to Mrs. M. L. Treadwell.

At Philadelphia, on May 26, 1896, by Rev. F. W. Weiskotten, Dr. E. Mayhew Michener, of North Wales, Pa., to Miss Mamie C. Smith, of Philadelphia.

SOCIETY PROCEEDINGS.

PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

THE second examination of the Board was conducted at Philadelphia on June 15th and 16th, at City Hall, commencing at 10 A.M. each day. The entire Board was present to conduct the various examinations as allotted to the several members.

Some twelve candidates presented themselves, representing the American, University of Pennsylvania, New York, and Toronto Veterinary Colleges.

The following applicants obtained the necessary percentage of 65 per cent. entitling them to the license of the Board: Drs. H. A. Christmann, Gilbert G. Drummond, John R. Mohler, H. D. Martien, of Philadelphia, graduates of the Veterinary Department of the University of Pennsylvania; Drs. A. W. Ormiston and Samuel Henry Johnston, of Philadelphia, graduates respectively of the American and the New York Veterinary Colleges; Drs. C. M. Heberton, Gwynedd, Pa.; Charles H. Miller, Duncannon, Pa.; James R. Mahaffy, of Wilmington, Del., graduates of the Veterinary Department of the University of Pennsylvania; and Dr. R. G. Rice, of Rome, Pa., graduate of the Ontario Veterinary College. One graduate of the Veterinary Department of the University of Pennsylvania and one from the Ontario Veterinary College failed to obtain the required average.

The Board elected officers for the ensuing year as follows: For President, Dr. W. Horace Hoskins, Philadelphia, Pa.; for Secretary-Treasurer, Dr. S. J. Harger, 205 N. Twentieth St., Philadelphia, Pa.

Prosecutions in a number of cases were ordered, and vigorous measures will be adopted in dealing with all violators of the several provisions of the Acts governing the practice of veterinary science in the Keystone State.

W. HORACE HOSKINS,
Secretary.

EXAMINATION QUESTIONS, PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS, AT PHILADELPHIA, JUNE 15 AND 16, 1896.

APPLICANT to answer ten of the questions on each branch, but no more. Check the number of each one of the questions you have answered. Unless otherwise stated, all questions to relate to the horse.

Practice of Veterinary Medicine. 1. Give the causes, symptoms, and treatment of polyuria. 2. Give the diagnostic symptoms of pleurisy and treatment of the same. 3. Give the symptoms of and exciting causes of tetanus. 4. Give the symptoms of choke in the horse and ox, and treatment for the same. 5. Give the diagnostic symptoms of impaction of the stomach, and treatment for the same. 6. Give the symptoms, causes, and treatment of osteoporosis. 7. How would you distinguish between contagious pleuropneumonia and tuberculosis in the ox? 8. Give the diagnostic symptoms of hog cholera, and the best methods of control of such an outbreak. 9. What

group of general symptoms make it difficult to distinguish between intestinal parasites and distemper in the dog in the incipient stage? 10. What is periodic ophthalmia? How would you diagnose it? and state treatment. 11. What are the predisposing causes, diagnostic symptoms, and treatment of parturient apoplexy (milk fever) in cattle? 12. What is influenza, and what forms and group of symptoms does it assume? 13. In an outbreak of rhino-adenitis among a large number of animals, what general plans of management would you adopt? 14. What varieties of worms infest the digestive tract of a dog? 15. What diseases infect the air-passages of sheep?

Sanitary Medicine, Meat- and Milk-Inspection. 1. What diseases of animals are most dangerous to consumers of meat? 2. What measures are required to suppress and eradicate pleura-pneumonia contagiosa and tuberculosis in cattle? 3. Give the symptoms and sanitary requirements of glanders. 4. In what manner would you demonstrate the contagiousness of rabies? 5. What sanitary conditions should be observed in the construction and management of a large barn where transient animals are sheltered? 6. Under what conditions would you condemn meat for human food? 7. How would you impress your seal of condemnation of live stock at export stations? 8. Supposing that you were placed in charge of some large abattoir as inspector. Explain how you would conduct the affairs of your office? 9. What are the indications of putrefaction? 10. How would you examine pork for trichinæ? 11. What is colostrum? Give its composition in the cow. 12. What would you consider a proper basis of solids in milk? How would you determine same? 13. Under what conditions would you condemn milk as unfit for human food? 14. What is the specific gravity of cow's milk of good quality? 15. What three essential parts is milk composed of, and how may these principal constituents be separated?

Zootechnics. 1. Describe the character of an eight-year-old mouth. 2. What is atavism? Give an example. 3. Give the signs of a good milk cow. 4. What precautions would you observe in purchasing a horse for breeding purposes? What diseases are hereditary, and what is the relative value of pedigree and performance? 5. What is a normal food, and what constitutes a normal day's ration for a horse? 6. Describe a Dutch (Friesian) cow. 7. What are the races of horse (*equinus caballus*). Name and describe two. 8. Define and illustrate by example the different methods of reproduction applied to the domestic animals. 9. Give the difference between the Spanish and the oriental ass. 10. What, in your opinion, is the relative influence of the male and female? 11. What is hybridization? Give hybrid between equine and asinine species. 12. What are the essential characteristics of a hybrid? 13. Define precocity, its causes and characteristics, with example. 14. Describe the time and frequency of the menstruations in the mare and cow. 15. What age does puberty occur in the various domestic female animals?

Therapeutics and Materia Medica. 1. What are the therapeutic uses for camphor? 2. What is the dose for a horse of *oleum tigllii*? *Hydrargyrum chloridum mite*? 3. Describe the physiological action of opium. What is the antidote for opium-poisoning? 4. Name the alkaloids of *hyoscyamus*. 5. What are the uses of chloral hydrate and the contra-indications to its use? 6. Write a prescription for purpura. 7. What are the therapeutic uses of belladonna? Give the dose of its principal alkaloid to a setter dog. 8. What is the antidote for lead-poisoning? 9. Describe briefly the physiological

action and uses of lobelia. 10. What do you consider the best cardiac depressant? Anti-spasmodic? Alterative? 11. What are the contra-indications to the use of chloroform? 12. Describe briefly how you would treat a case of arsenical poisoning in a dog. 13. How would you disinfect a stable? 14. Name three mineral astringents. Three vegetable astringents. 15. What is the principal use of spigelia?

Veterinary Diagnosis. 1. How would you differentiate between chronic glanders with lesions in the head and collection of the nasal sinuses? 2. What are the characteristic symptoms of spavin? 3. Give the diagnostic signs of pleurisy and pneumonia in their several stages. 4. What are the diagnostic signs of traumatic pericarditis in cattle; for what other pathological conditions may it be mistaken? 5. How would you distinguish mange from vesicular eczema in the dog? 6. What are the diagnostic symptoms of collection of the guttural pouches and with what other conditions may it be confounded? 7. How do you differentiate between shoulder and foot lameness? 8. Upon what is the diagnosis of navicular arthritis based? 9. In case of lameness, how do you determine the lame member? What is the difference in the movements of the member in shoulder lameness as compared with foot lameness? 10. What are the diagnostic signs of laminitis? 11. Give a chronic case with a history of gradual falling off in flesh, tucked-up abdomen, general stiffness in locomotion, or lameness, possibly intermittent. Of one or more members, what would be your diagnosis? With what other conditions may it be confounded? 12. What is your general procedure in examining a horse for lameness under the most favorable conditions? 13. How would you diagnose anthrax in cattle? 14. How do you administer tuberculin for diagnostic purposes in tuberculosis, and what constitutes a reaction? 15. What constitutes a typical reaction with mallein in a glandered horse?

Chemistry. 1. Define chemistry. 2. Define an element. 3. What is atomic weight? 4. Name and define the various kinds of attraction. 5. What are the symbols for the following elements: Oxygen, mercury, silver, lead, sodium, manganese, potassium, magnesium, nitrogen, and iron? 6. What is a test for a carbonate? 7. What is the composition of water? Air? 8. Write the formula for common salt, hydrochloric acid, sulphuric acid, Epsom salt, and baking soda. 9. What is the atomic weight of hydrogen, oxygen, nitrogen, sulphur, and silver? 10. What is the flame-test for sodium? Copper? 11. Give a test for arsenic. 12. Give a test for albumin in the urine. 13. Give a test for sugar in the urine. 14. How would you prepare sulphuretted hydrogen? 15. How would you test a case of lead-poisoning in a cow from its milk?

Pathology. 1. Define inflammation. 2. What is a complete cell? 3. What are the steps to inflammation? 4. What are the terminations of inflammation? 5. What are the two general divisions of inflammation? 6. What is chronic inflammation? 7. Define glanders. What kind of an inflammation? 8. Define tuberculosis. 9. What is a cyst? How many kinds? 10. What is a malignant tumor? Benign tumor? 11. What are the physical types of the following tumors: Osteoma, myoma, neuroma, lipoma? 12. What is leukæmia? 13. What is the cause of moist gangrene? 14. What are the stages of croupous pneumonia? 15. Define anthrax.

Obstetrics. 1. What does successful fecundation depend upon? 2. Mention some of the causes of sterility. 3. Describe foetal circulation. 4. What

are the uses of the liquor amnii? 5. What constitutes the umbilical cord and what purpose does it serve? 6. Give some of the rational and some of the material signs of pregnancy. 7. What is the normal duration of pregnancy in the mare? What in the cow? 8. What hygienic measures would you observe in the management of animals during gestation? 9. Name the diseases peculiar to pregnancy. 10. Mention some of the accidents of pregnancy. 11. What constitutes normal parturition? 12. What are the various stages of parturition? 13. How would you deliver a mare or cow in which the four feet of the fœtus were presented sterno, abdominal presentation, head retained? 14. How would you treat complete inversion in the uterus? 15. What is mammitis? Give symptoms and treatment for same.

Surgery. 1. Describe symptoms and surgical treatment for collection of the superior maxillary sinuses in the horse. 2. Describe symptoms and surgical treatment of collection of the guttural pouches in the horse. 3. Describe symptoms and surgical treatment of roaring in the horse, viz.: Laryngotomy or arytenectomy. 4. Describe symptoms and surgical treatment for cartilaginous quittor, resection of lateral cartilage. 5. Describe symptoms and surgical treatment for amputating penis of the horse. 6. Describe symptoms and surgical treatment of spavin. 7. Describe symptoms and surgical treatment for paraphimosis. 8. Describe symptoms and surgical treatment for navicular disease. 9. Describe symptoms and surgical treatment for ringbone. 10. Describe symptoms and surgical treatment for conjunctivitis. 11. Describe symptoms and surgical treatment for string-halt. 12. Describe surgical treatment for toe crack, superficial and deep. 13. Give indications for tracheotomy in the horse—describe operation. 14. Describe ovariectomy in the bitch and give physical contra-indication. 15. Describe symptoms and surgical treatment for impaction of the rumen of the cow.

Anatomy. 1. Describe the bones of the pelvis. 2. Describe a dorsal vertebra. 3. Describe the flexor pedis perforans and its check ligament. 4. Name the superior cervical muscles in their order of superposition. 5. Name and describe the ligaments of the fetlock. 6. Name and locate the principal superficial veins of the horse. 7. Describe the plantar nerves. 8. Describe the regional anatomy in low neurectomy. 9. What is the difference between the lungs of the horse and those of the ox, and what the principal peculiarity of the latter? 10. Describe the arterial supply of the foot below the fetlock. 11. Describe the cunean tendon. How can it be located? 12. Describe the liver. 13. What is the difference between the kidney of the horse and that of the ox? 14. Describe the common carotid arteries. 15. Describe the pneumogastric nerve.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

THE regular meeting of the Association was called to order Tuesday, June 2d, at 8.30 P.M., at the Academy of Medicine, by the President, Dr. Huidekoper. On roll-call the following members responded, viz.: Drs. Bretherton, J. S. Cattanch, Delaney, Ellis, Glover, Huidekoper, Hanson, Lellman, MacKellar, Neher, and O'Shea. The minutes of the previous meeting were read and approved.

Reports of committees: Judiciary Committee, Dr. O'Shea, Chairman, reported the passage of the Cole Bill, and made a brief report as to what the committee was doing with non-registered men. Moved and seconded that the report be accepted; carried.

Committee on Alteration in By-laws, Dr. Hanson, Chairman, reported that the committee offered the following alteration in Article XIII. of the By-laws, to read: "The Association shall meet upon the first Wednesday of each month at the Academy of Medicine, except during July, August, and September," instead of "The Association shall meet upon the first Tuesday of each month, except during July, August, and September." Moved and seconded that the report be accepted; carried.

Moved and seconded that registered veterinary graduates of Kings, Queens, Richmond, and Westchester Counties be eligible to membership in the Veterinary Medical Association of New York County; carried.

Moved and seconded that the Secretary invite practitioners from said counties to the October meeting; carried.

Moved and seconded that the meeting adjourn; carried.

ROBERT W. ELLIS, D.V.S.,
Secretary.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THE June meeting of the Association was called to order by President John R. Hart, at 8.15, Tuesday evening, the 9th ult., with the following members present: Drs. Thomas B. Rayner, James B. Rayner, Hile P. Eves, Harry J. McClellan, Francis S. Allen, James Johnston, Charles T. Goentner, James T. McAnulty, W. Horace Hoskins, John R. Hart, and W. L. Rhoads.

The Committee on Certificates presented a form for the approval of the members. There were a number of suggestions made, principal among which was that the form so read as to show the date of a member's initiation, also the date of adoption of the certificate. This committee was continued till the September meeting, with instructions to have the certificates at that time.

Dr. Hoskins spoke of a bill before the United States Senate, known as Senate Bill 1552, which prohibited vivisection and experiments with animals. This led to an animated discussion, the sense of the Association being that its passage would cause those who were interested in science to evade or directly violate the law. It was then moved, seconded, and carried that the Association adopt the following resolution, and that the member should transmit copies of same to their representatives through the Secretary:

Whereas, believing that the best interests of humanity are served by the judicious permission of experimental research on the lower animals, whereby the value of certain methods of surgical interference can only be determined, and the worth of certain lines of remedies, which at this particular time in the history of medical progress seem to be based upon more exact deductions than ever before, and the wisdom of fully testing these remedies on the lower animals demand no comment from any intelligent, thoughtful person: *Resolved*, that we therefore believe that Senate Bill No. 1552 is calculated to throw around these investigations unnecessary and unjust restrictions, and for these reasons merit our disapproval, and we call upon our representatives from this section to manifest our condemnation of this measure by their voting against the same.

Dr. Allen, as chairman of the luncheon committee, now made a report, stating that the verification of what he had said would be found at the restaurant in the Odd Fellows' Temple. It was now moved and carried that the

Association pay for the luncheon, and the Secretary was instructed to draw on the funds for that amount.

A number of communications were now read, Dr. Bachman's being specially interesting and encouraging.

The resignations of Drs. S. J. J. Harger and J. Rein Keeler were now read, voted upon, and immediately accepted by the Association.

The Board of Censors now thoroughly examined the membership roll, and recommended for expulsion the following members for non-payment of dues: R. G. Webster, L. O. Lusson, William B. Wertz, J. T. Ferley, T. Earle Budd, W. T. Edwards, A. F. Schrieber. These expulsions were thoroughly indorsed by the Association.

Dr. Charles T. Goentner cited three cases of stomatitis in dogs, all in the same kennel, about five weeks intervening between the cases. These dogs had been fed on oatmeal and cracklings, and had the best hygienic surroundings. There was a general inflammation of the mucous membranes, and the post mortem showed a profuse catarrhal condition of stomach and upper bowels. Was it contagious?

The report of a case of impaction kindly sent by Dr. E. H. Moore was laid upon the table till the September meeting, as the time was growing late and it was thought advisable to adjourn to the dining-hall, which was immediately done.

Thus part first of the evening's entertainment was finished, and part second began with such alacrity that one might have thought banqueting was the principal aim in life of every veterinarian. Here, too, the zest shown by the participants proved that every true veterinarian (and the membership and friendship of the K. V. M. A. is composed of this class exclusively) believed what was worth doing was worth doing well and immediately. It was also proven during the first course that they were not adherents of the theory that like cures like. Yet from the manner in which the clams disappeared they thoroughly proved that unlike attracts. In fact, throughout everyone proved himself to be an adherent of the old rule, which sayeth, "Eat, drink, and be merry, for to-morrow you may die." And the fact that all escaped gastrotomy was due more to a special act of Providence than any fault of the caterer. This part of the programme was fraught with quite as great an interest as part first had been, and as the evening wore on the participants became even more interested, more enthusiastic, and, strange to say, more eloquent than usual. This (as we are told worldly affairs will) wound up in smoke, and with hearty good-fellowship the meeting adjourned—thus ending one of the most successful years in the history of the oldest local veterinary medical association in continuous existence.

J. R. HART,

President.

F. S. BRIDGE,

Treasurer.

W. L. RHOADS,

Secretary.

MISSOURI VALLEY VETERINARY ASSOCIATION.

THIS Association held its second annual meeting in the parlors of the National Hotel, in Leavenworth, Kansas, Wednesday, June 10, 1896. The meeting was called to order by President Stewart. The following members responded to roll-call: Drs. Bray, Harrison, Hunter, McCurdy, Sihler,

Stewart, Biart, Pritchard, Kaupp, and Payne. Visitors: Drs. T. J. Turner, Day, and Hopkins. The minutes of the February meeting were read and approved. The censors reported favorably upon the applications of Drs. Day, Turner, Hopkins, and Brooking for membership, and they were duly elected.

The Secretary's report was read and ordered filed.

A resolution was presented to change Article I., Chapter 2, of By-laws.

President Stewart then gave his annual address, it being an excellent paper and thoroughly enjoyed by all.

Dr. McCurdy's paper on "Tuberculosis," Dr. Pritchard's views on "Control of Contagious Diseases," Dr. Moore's "Castration of Cryptorchids," Dr. Biart's "Preventive Inoculation for Contagious Pleuro-pneumonia," were all valuable papers, and the discussion upon the same continued until nearly 1 A.M. Great interest was manifested throughout.

The election of officers resulted in the re-election of Dr. S. Stewart, President; Dr. George C. Pritchard, Vice-President; Dr. T. J. Turner, Second Vice-President; Dr. S. L. Hunter, Secretary and Treasurer. Censors, Drs. Sihler, Payne, Hopkins, Bray, and McCurdy.

The following were appointed to prepare papers for our next regular meeting in October: Drs. Hopkins, Day, Harrison, Sihler, G. O. Netherton, J. O. Young, and C. B. McClellan.

Upon motion, duly seconded, the meeting adjourned to meet in Kansas City, Mo., in October.

S. L. HUNTER, V.S., D.V.S.,
Secretary.

SCHUYLKILL VALLEY VETERINARY MEDICAL ASSOCIATION.

THE Association held its annual meeting in the parlors of Hotel Woll, Pottsville, Pa., June 17, 1896. The meeting was called to order by the President, Dr. S. G. Burkholder, at 10 A.M. On roll-call the following members responded: Burkholder (President), Sallade, Faughman, Fridirici, Noack, Snyder, Kershner, Bieber, and Moyer. The minutes of the previous meeting were read and approved.

Dr. W. H. Yingst, of Harrisburg, Pa., was duly elected as a member of the Association.

The following officers were elected by ballot for the ensuing year: President, Dr. S. G. Burkholder, Denver, Pa.; Vice-President, Dr. W. H. Moyer, Elizabethville, Pa.; Corresponding Secretary, Dr. Otto Noack, Reading, Pa.; Recording Secretary, Dr. U. G. Fridirici, Tamaqua, Pa.; Treasurer, Dr. Frank McCarthy, Pottsville, Pa.; Trustees, Drs. J. W. Sallade, Pottsville, Pa.; P. J. Kershner, Fleetwood, Pa.; U. S. Bieber, Kutztown, Pa.

Dr. Otto Noack was appointed delegate to the State Veterinary Association, which meets in Reading, Pa., in September.

Dr. J. W. Sallade was appointed delegate to the National Veterinary Association, which meets in Buffalo, N. Y.

The following papers were read and discussed: "Mange," by Dr. U. S. Bieber. "Castration," by Dr. W. H. Moyer. "Emphysema," by Dr. Otto Noack.

Report of Case. Dr. U. S. Bieber was called to see a case May 8th; found it to be a bay gelding, twelve years old, suffering from enlargement of

right side of cheek. He at once diagnosed a case of salivary calculi, and advised an operation, which was performed; upon the removal of calculus found it to weigh eight ounces. A complete recovery was the result.

Papers for next meeting: Dr. J. W. Sallade, "The Social Position of the Veterinarian." Dr. J. C. Faughman, "Tetanus." Dr. A. Pottenger, "Pneumonia." Dr. W. H. Yingst, "Shoeing." Dr. U. G. Fridirici, "Periodic Ophthalmia."

Meeting adjourned at 3 P.M. Next meeting to be held in September in the city of Reading.

DR. U. G. FRIDIRICI,
Secretary.

THE CONNECTICUT VETERINARY MEDICAL SOCIETY.

THE annual meeting of this Society was held at the office of Dr. Thomas Bland, in Waterbury, on the evening of June 20, 1896. Drs. Whitney, Kelley, and Isaacs, of New Haven; Lyman, of Hartford; Storrs, of Willimantic; Bland, of Waterbury; and Eliot, of Ansonia, answered to roll-call. Drs. Keeley and McKenna were present as guests of the Association. A communication from Dr. Ross, of New Haven, stating that he could not be present, and wishing us an interesting and instructive meeting, was read.

The Board of Censors reported favorably on the applications for membership of Dr. R. P. Lyman, of Hartford, and Dr. R. D. Martin, of Bridgeport, and they were elected. The application of Dr. Ingram, of Hartford, was not acted upon.

Applications for membership were received from Dr. P. S. Keeley, a graduate of the New York College of Veterinary Surgeons, and Dr. E. P. McKenna, a graduate of the Veterinary Department of Harvard University.

The election of officers for the ensuing year was as follows: President, Dr. Harrison Whitney, New Haven; First Vice-President, Dr. E. R. Storrs, Willimantic; Second Vice-President, Dr. R. P. Lyman, Hartford; Secretary, Dr. H. W. Eliot, Ansonia; Treasurer, Dr. J. H. Kelley, New Haven; Board of Censors, Drs. J. E. Gardner, Hartford; R. P. Lyman, Hartford; Thomas Bland, Waterbury; M. Isaacs, New Haven; R. D. Martin, Bridgeport.

Dr. Bland then gave a report of an operation that he performed on the mare Vandetta, owned by F. A. Coe, of Middlefield, Conn. The mare had stood in her stall all winter. The first time she was taken out for exercise it was noticed that she wheezed a little, and kept growing worse. A veterinarian was called and diagnosed the trouble as acute laryngitis, and prescribed appropriate remedies. The breathing kept growing worse till it was necessary to insert a tracheotomy tube, which at once gave relief. Temperature and pulse always remained nearly normal. Dr. Bland, on an internal examination of the throat, discovered a large growth at the base of the tongue, extending to the epiglottis. This growth, pressing backward on the epiglottis, closed the opening of the larynx, which prevented the horse from breathing. Instruments were at once made for an operation on the growth, which proved to be a mucous cyst. As soon as this was opened and the contents evacuated the horse was once more able to breathe in a natural way. The horse died in about two weeks after from septic pneumonia. Dr. Bland made a post-mortem and secured the larynx and part of the tongue,

which he showed to the members present. The walls of the cyst and the opening into it could still be seen.

After the meeting adjourned a banquet was served at Batchaler's.

The next meeting will be held at Hartford, Conn.

H. W. ELIOT, V.S.,
Secretary.

MASSACHUSETTS VETERINARY ASSOCIATION.

THE thirteenth annual meeting was held at Young's Hotel, Boston, April 22, 1896. The only business of importance was the election of officers, with the following result: President, Dr. John M. Parker, Haverhill; First Vice-President, Dr. Madison Bunker, Newton; Second Vice-President, Dr. Daniel Emerson, Lynn; Secretary and Treasurer, Dr. Howard P. Rogers, Allston; Executive Committee, Drs. Thomas Blackwood, Boston; W. E. Peterson, Waltham; Henry Lewis, Chelsea; J. R. McLaughlin, Newton; George Lee, Brighton.

After the business was completed the members adjourned to the banquet hall. As there were no guests present, the after-dinner exercises were very informal.

HOWARD P. ROGERS, V.S.,
Secretary.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

PRESIDENT RIDGE announces the following appointments of delegates to the United States Veterinary Medical Associations and other kindred organizations: United States: J. C. Foelker, James T. McAnulty, George B. Jobson. New York: W. Horace Hoskins, C. C. McLean, Robert Formad. Maryland: W. H. Hoskins, W. B. E. Miller, James B. Rayner. New Jersey: L. O. Luson, F. S. Allen, H. B. Felton. Ohio: J. C. McNeil, James A. Waugh, N. Rectenwald. Keystone: H. J. McClellan, Charles Lintz, James T. McAnulty. Philadelphia Veterinary Medical Association: William Tag, John W. Adams, M. E. Conard. Schuylkill: J. W. Sallade, J. H. Timberman, W. S. Phillips. Lehigh: Otto Noack, Leonard Pearson, Francis Bridge.

RESOLUTIONS ADOPTED BY THE AMERICAN VETERINARY COLLEGE ALUMNI ASSOCIATION ON THE DEATH OF DR. R. A. McLEAN. WHEREAS, It has pleased God in His infinite wisdom and plans to remove from our midst our fellow-alumnus, Roderick A. McLean, of the Class of 1879; and be it

Resolved, In bowing to His supreme will, we acknowledge the loss of one whose name and face had grown familiar and dear to us all, through his interest and work in this Association; and be it further

Resolved, That this loss removes from among us one whose strong traits of character, his strong ties of friendship, his earnest and decided convictions, so much to be admired among men, that in paying this just tribute to his memory it is with a hope that we may strive to emulate the same; and be it further

Resolved, That a copy of these resolutions be spread upon our minutes, and be sent to the sorrowing parents.

W. Horace Hoskins (Chairman), William H. Lowe, H. D. Hanson,
Committee.

U. S. V. M. A.

DR. L. A. MERILLAT, Secretary of McKillip Veterinary College, Chicago, will present a paper at Buffalo on "Veterinary Dental Surgery."

Dr. John W. Adams, of the University of Pennsylvania, will discuss the position of the colleges in relation to their support and direction of schools of farriery.

The Association of Faculties will probably hold their annual gathering a day or two in advance of the U.S.V.M.A. meeting. Secretary Adams is in active communication with the heads and members of all the veterinary faculties in North America, and a strong and enthusiastic meeting is assured.

Prof. Schwarzkopf has lost none of his keen interest in veterinary education in America, and will be an earnest and forceful advocate at the Buffalo meeting of higher veterinary education.

There will be a week of good things at Buffalo and the literary attractions will be a feast for everyone to indulge in. Let there be but few stay-at-homes.

The Northwest will be heard in the convention, and the ever-important subject of the "Nail-wounds of the Foot" will be presented by Dr. S. B. Nelson, of Pullman, Washington. The subject will be opened in discussion by Prof. Zuill, of Philadelphia.

The members will be regaled by the consideration of "Serum-therapy in Hog-cholera," by Dr. A. F. Peters, of the Nebraska experiment station.

The completion of a long line of experiments by Prof. M. H. Reynolds, of Minnesota, in determining the relative value of "cathartics," will be further reported.

A paper on "Dairy Inspection," by Dr. Fred Braginton, of Indiana, has been added to the list of subjects.

Prof. Grange, of Michigan, and Prof. White, of Ohio, will both offer papers at this meeting; the subjects will be announced in the August number of the JOURNAL.

The programme for Buffalo will present the most widely distributed list of papers, geographically, ever presented at a single meeting in the Association's history.

Drs. Dalrymple, of Louisiana; Bird, of Montana; Mayo, of Kansas; Hinebauch, of North Dakota, are also expected to contribute papers for this meeting.

Reports of committees and papers will have a time allotted to each by the *Comitia Minora*, an outline of which will be given in the August number.

On to Buffalo. The Empire State sends greetings and a welcome to every veterinarian to come and bask in her hospitality.

Chairmen Clement and Harger, of the Intelligence, Education, and Disease Committees, are rapidly maturing their plans for a complete survey of the field. Prompt replies to their requests are earnestly urged upon all the members.

Wake up, State Secretaries, there is much for you to do; you have accepted the responsibilities, and Chief Secretary Stewart is anxious about your work.

Treasurer Robertson says he will be there with his little boomlet on hand, bent for the Pacific coast, if it is not too warm to urge it.

State Secretary Rhoads has in preparation a letter to members of the pro-

fession in Pennsylvania urging their attendance at Buffalo, and calling upon the profession to more strongly ally themselves with the parent organization.

A party of Philadelphians hope to arrange for a ten days' outing in connection with the annual meeting at Buffalo.

Reports from the Eastern States indicate a large attendance from the New England district.

A review of the work and province of State veterinary examining boards will be a feature of the meeting at Buffalo. This subject should merit the attention of the heads of colleges.

There will be no prizes offered this year by the Association for papers, owing to a deficit in the treasury.

The Publication Committee will be heard from, and it is rumored that they will speak in no uncertain tones. It is to be hoped that there will be few delinquents on the dues list, so that the falling stones will have but few targets to spend their force upon.

Messrs. Osgood, Lyman, Salmon, Pearson, Trumbower, and others will discuss tuberculosis in its present and future important aspects.

The work of the Master Horseshoers' Association, in encouraging the establishment of schools of farriery for the better education of their craftsmen, will be presented for the information and consideration of the Convention.

The Schuylkill Valley Veterinary Medical Association sends as her delegate their President, Dr. James W. Sallade, one of the Keystone State's most active veterinarians.

President Ridge, of the Pennsylvania State Veterinary Medical Association, has named the ever-faithful Dr. Foelker, of Allentown, as one of the delegates; associated with him are Dr. George B. Jobson, of Franklin, and Dr. James T. McAnulty, of Philadelphia, one of the most ardent and efficient workers in the national and local master horseshoers' organizations.

Municipal legislation as it applies to milk- and meat-inspection will come in for a goodly share of attention. A generous invitation is extended to all veterinarians who hold these positions to come and contribute their views.

The colleges of our country will come in for a generous meed of praise for the great advances they have made in extending higher veterinary education over the entire land.

Secretary Morton will be appealed to for the most generous indulgence, with due regard to the public service, in granting leave of absence to the veterinarians in the service, that they may contribute to the discussion of the many aspects of national, State, and inter-State inspection of food-products at Buffalo.

It is to be hoped that the veteran member, Prof. Liautard, will return from sunny France in time for daily attendance on the sessions of the convention.

Nebraska veterinarians are fully alive to the importance of the convention at Buffalo, and Secretary Peters hopes to outdo at Buffalo the grand work done in the line of attendance by Minnesota at Des Moines.

Buffalo will afford no excuse for non-attendance of the members in the lake States; facilities favor these representatives greatly at this time.

New York City will send to the "Queen City of the Lakes" some new faces of old members, whose renewed interest in Association affairs will be gratefully appreciated by the present officers.

State Secretary Rhoads, of Pennsylvania, has identified himself with the Masonic Order in the Keystone State; but he says this will only intensify his work in the interest of Buffalo.

Secretary Stewart's gentle reminder that you are in arrears, Mr. Member, comes to us couched in the softest language and makes one feel a little uncomfortable and chagrined at our dereliction in this direction. He fittingly says that the work already done by the National Association for the profession is of such worth and magnitude that, had it cost ten times the amount expended, it would still have been wisely used means.

Treasurer Robertson sighs for the days that are gone when the surplus in the treasury was of such magnitude as to cost hours of anxiety as to its safe-keeping. He finds himself now without an occupation and yearns for something to do. Pay up your back dues, fellow-members.

A large number of certificates of membership was issued in June by Secretary Stewart. There are more to follow this month.

Chairman Hinkley, of the local committee of arrangements, says nothing will make him happier than the largest attendance that has occurred at any of our meetings for years. State Secretaries, take notice.

A leading Eastern veterinarian says he will not occupy a post of distinction alongside the driver in attending the sessions from his hotel, *à la* Des Moines. It is to be hoped that it will not be so warm, for he says he would rather walk.

Chairman James Robertson, of Chicago, of the Master Horseshoers' Association, will be at Buffalo, and report the educational progress of their State and local schools of instruction in farriery. Dr. McAnulty, of Philadelphia, another member of the committee, will also be present to supplement the report of the chairman.

Dr. J. F. Winchester, of Lawrence, Mass., will present a paper on "Diphtheria" at the coming convention. Among those who have been assigned places for the discussion of this paper will be Prof. James L. Robertson, of New York City, and W. L. Zuill, of Philadelphia.

The Genesee Hotel will be made the headquarters of the convention during our stay in Buffalo. Ample accommodations for the members and delegates will be provided for in the way of rooms for committee meetings and kindred associations.

The New York State Association will convene at Buffalo on the 4th and 5th of September, when a very attractive programme will be presented, to which all the delegates and members of the U. S. V. M. A. will be accorded a warm welcome. Among the interesting papers to be presented for consideration are: "Veterinary Education," by Dr. Thomas Giffen, of New York City; "Navicular Disease in Horses," by Dr. George H. Berns, of Brooklyn; "Veterinary Jurisprudence," by Dr. J. P. Thomson; "Bacteria in Milk," by Dr. Wilson Huff, of Rome; "Veterinarians as Sanitarians," by Dr. Claude D. Morris, of Pawling. A number of interesting operations will be performed in connection with the State meeting at the hospitals of the local veterinarians.

Buffalo has 150 miles of street railways; 26 railways enter the city; 250 trains daily arrive and depart on these roads; nearly 1800 miles of asphalted streets; 17 miles of park driveways.

PERSONAL.

Dr. J. H. Honan, professor of physiology at the McKillip Veterinary College, has resigned from the faculty.

Veterinarians Frank S. Allen and C. H. Zink, the latter a recent graduate of the Veterinary Department of McGill University, are considering propositions looking toward their connecting themselves with one of the Western veterinary colleges.

Veterinarians Osgood and Peters, of Boston, Mass., have gone into camp with the troops of the Bay State.

A number of changes will be made in the faculties of the Detroit and McKillip Veterinary Colleges the coming sessions of 1896-97.

Dr. H. D. Gill, of New York City, has been on the sick-list, and away from practice for a few days' rest and recuperation.

Samuel D. Bickel, V.M.D., of Norristown, was one of the graduates of the Medical Department of the University of Pennsylvania on June 11, 1896.

State Veterinarian Pearson, of Pennsylvania, was a recent visitor to Massachusetts on matters pertaining to the work of the State Veterinary Sanitary Board. Secretary Edge accompanied the State Veterinarian.

Dr. F. H. McCarthy, of Pottsville, has recently suffered from appendicitis, and was operated upon successfully at the hospital at his home.

Dr. N. H. Fegley, of Pottsville, successfully passed the civil-service examination of the Bureau of Animal Industry, and has been assigned for duty at Jersey City.

Dr. H. D. Gill, of New York City, has successfully passed the civil-service examination and been appointed to a position as Inspector in the Bureau of Animal Industry, with directions to report at Chicago for duty.

Dr. Cecil French, of Washington, D. C., has just completed the purchase of ground in one of the suburbs, where he will at once erect a canine infirmary, consisting of a number of wards with runs attached. An isolated contagious ward will be one of the leading features; also, an operating-room, shampooing-room, feed-room, etc. The whole building will be heated by a

hot-water plant. A boarding department and canine ambulance will complete the undertaking.

Dr. M. E. Knowles has severed his connection with the Marcus Daly ranch at Hamilton, Montana.

Dr. W. L. Rhoads, of Lansdowne, Pa., has placed plans in the hands of contractors for the construction of a commodious veterinary hospital. It will be two stories in height, and in addition to office, pharmacy, elevator, harness-room, etc., there will be eight single and two box-stalls on the first floor.

Prof. A. Liautard, of New York, continues to remain abroad, and will probably not return to America until the fall.

Dr. John S. Buckley, honor-man at the recent graduating exercises of the American Veterinary College, has been appointed an instructor in veterinary science at the Maryland Agricultural College.

Dr. L. P. Cook, of Cincinnati, late Professor of Surgery in the Ohio Veterinary College at Cincinnati, has successfully passed the civil-service examination of the Bureau of Animal Industry, and been appointed an inspector and assigned for duty at the port of New York.

Dr. Huidekoper is on a visit to his brother at Meadville, Pa. A physical examination lately made revealed the presence of fluid in his chest, necessitating his retiring for a time from his practice, and compelling him to seek a different climate.

Dr. Edward N. Leavy, valedictorian of the Class of '96, American Veterinary College, has opened a well-equipped and located dog-hospital at Lexington Avenue and Sixty-first Street, New York City. The doctor is making a specialty of canine diseases.

Dr. Martin has bought the practice of Dr. James Hamill, deceased.

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THE JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES.

VOL. XVII.

AUGUST, 1896.

No. 8.

SOME PERTINENT REMARKS BEARING UPON TUBERCULOSIS.

BY COOPER CURTICE, M.D., D.V.S.,
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On August 29, 1893, the Guernsey herd of Mr. R. A. Borden, of Easton, N. Y., comprised fourteen head: seven cows, three bulls, two heifers, and two calves. Previously Mr. Borden had bought and lost by death a cow, Lady Champion, of a disease characterized by cheesy nodules in the lungs. The owner desiring to show a number at the State Fair, and noticing that his best one was ailing, called upon the State Board of Health to inspect them. An inspection made by Dr. Charles Mackey and the writer, who were detailed by Dr. Lewis Balch, the secretary, indicated that six cows and two bulls were tuberculous. The field notes of this inspection are in Table I.

On page 494 of Volume II. of the *Fourteenth Annual Report* (1893) of the *New York State Board of Health* occur the following passages, which sum up the discussion about this herd at that time, and the reasons for handling it in a manner different from that involving the complete annihilation of all suspected animals which seemed to be necessary heretofore. The passages are from a letter, an answer to another from Dr. Balch, and was the result of conversations and correspondence between Mr. Borden, Dr. Balch, and the writer.

"Another inspector" (Dr. Curtice), "writing under date of September 3, 1893, makes the following observation: 'The proposed methods of handling these cattle by slaughtering part and quarantining the others is by far the best that could be pro-

posed. It was part of the scheme I had in mind when I wished that the Board of Health had its own farm for experimental purposes.'

"The scheme was not for us to propose to Mr. Borden, but now that he has accepted the burden of expense, and proposes to maintain strict quarantine, it seems well for us to accept. If Mr. Borden will hold out with his herd for two or three years or until the State has established an experimental farm, when the experiments could be continued, the Board of Health will have under its control one of the finest opportunities for ascertaining new facts regarding heredity that could be planned.

"I regard the proof that calves dropped from tuberculous dams, separated immediately and fed either on Pasteurized milk or healthy milk not sterilized, will not become tuberculous until exposed to the disease at an after-date, to be of the highest importance economically. . . .

"If by proper handling of these cattle we can save their offspring to the State in a healthy condition we will have met a most serious question in a fortunate manner. To thus handle grade cattle easily, or comparatively easily, replaceable by others, is, on account of expense, clearly out of the question. In this instance the value of the cattle renders the experiment possible, even to be undertaken by the owner."

It was decided accordingly to kill four: the two-year old bull Champion, and cows Maid, Maud, and Elva, which stood next each other in the stable. Tuberculosis was detected in Champion, Maid, and Maud by physical examination alone. The other cattle gave no physical evidence of disease, and all but Maud were in fine order. She was inclined to be thin. Her condition was such, however, but a few months earlier for her to have been selected as a representative-Guernsey giving milk sufficient in quantity and butter-fats to enter the World's Fair butter-test at Chicago.

The yearling Angus was saved as the sire of the new herd, although the test proved him tuberculous. He represented the fruit of twelve years' careful selection on the part of Mr. Borden, and perhaps centuries on the part of all the breeders of the Guernseys. As Mr. Borden claimed, he seemed all that could be desired for a yearling.

The post-mortem examination of the slaughtered cattle on September 23d gave the following results:

Champion. In both testicles a number of cheesy nodules, some an inch in diameter. The left posterior pharyngeal lymphatic gland was filled with cheesy nodules. The right lung contained numerous caseous masses, one 3 inches in diameter. The cephalic lobe of the left was a solid mass of cheesy material. The posterior mediastinal gland was 8 inches by 3 by 2½. Another was 2½ inches in diameter; others were enlarged. The left bronchial was 2½ inches in diameter; all were filled with a soft caseous material. The intestinal lymphatics were studded with hemorrhagic points, and many had cheesy nodules. The portal glands were large and cheesy. In the liver-substance were a few scattered nodules. The lungs were discharging tubercular material through the trachea.

Maid. The left pubic gland was egg-size; both it and the right contained cheesy nodules. Glands along the trachea were enlarged and cheesy. Anterior mediastinal glands much enlarged, egg-sized. The posterior mediastinal glands were 8 inches by 6 by 3. Both lungs contained very large abscesses; these were old pleuritic adhesions. In the substance of the liver were numerous small tubercular foci. The portal gland was 2½ inches in diameter and cheesy. The spleen and omentum had numerous grape-like bodies attached, which extended into the pelvic cavity. Intestinal lymphatics presented numerous cheesy foci. The mucous membrane of the horns of the uterus were studded with numerous small cheesy foci.

Maud. The anterior lobe of the left lung was caseous; the median lobe and the right lung had many nut-sized foci. The large posterior mediastinal gland was 6 inches by 3 inches and cheesy; others were very large. The anterior mediastinals were also affected. The left bronchial was 2½ inches in diameter. The liver had a few cheesy nodules. The portal gland was enlarged and cheesy. There were tubercular masses in the intestinal lymphatic glands. Grape-like masses were on the omentum.

Elva. A three-inch mass was found in the right lung, and a small half-inch nodule in the cephalic lobe of the left. The posterior mediastinal was calcareous and cheesy. The left bronchial was 3 inches in diameter.

All were tuberculous, Elva, the least affected, might have been reserved with the others, but was selected to demonstrate the fact that those reserved were not so badly affected as those already slaughtered. The diagnosis of extent of disease was made upon the delayed reaction and general good physical appearance.

Mr. Borden placed the remaining animals which had reacted to the test in another barn, and after disinfecting the barn where all had been kept placed the healthy ones in it.

Dr. Mackey, a month or two later, returned and retested some of the cattle. The old bull Glenwood reacted, and was slaughtered. The doctor informs me that he found in one of the lungs but one quite thoroughly encapsulated nut-sized mass with a cheesy centre.

At the time of the sudden stoppage of work by the Board of

Health on the 31st of March, 1894, Mr. Borden's cattle were, with others throughout the State, released from quarantine, and the valuable experiment abandoned.

Mr. Borden, however, scrupulously continued it, and on the 19th of May retested the new herd. Of this test Mr. Borden writes me as follows: "I send you a record of the temperatures taken before and after injections. The cattle are all in good condition except No. 10, a bull calf, sired by the young bull Angus, which you condemned nearly two years ago. Nos. 11, 12, 13, 14, and 15 are also young calves sired by him. No. 15 is out of Rosalind, condemned at that time. The calves are two or three months old. No. 16 is Rosalind and No. 17 is Angus; Nos. 1, 3, 4, 5, and 7 are the cows that bore the other calves. The bull Angus and cow Rosalind seem to be well except as shown by the tuberculin-test. The other two cows you condemned run down so last winter that I killed them. It is a source of great satisfaction to me to have tested the cattle and have them come out as I think they have. It seems now as if it was safe to use the bull, as I have been doing for two years. Can his produce be any more subject to the disease now than if he were sound?"

The last paragraph refers to the feeling of doubt that Mr. Borden has had in reference to the breeding from Angus. The old superstition regarding heredity of tuberculosis by breeding is so engrafted in literature that it will be a long time before men fully understand that the disease is transmitted by animals living together and not by their breeding together. The disease has not yet destroyed the vitality of the young bull, and so long as he retains apparent good health so long will he be able to get healthy offspring, more especially when the dams are healthy in every way. Even the progeny of the tuberculous pair Angus and Rosalind will be free from tuberculosis until the disease is contracted just exactly as another animal of healthy parents contracts it, and will succumb to its ravages no sooner, no later.

Table II., herewith presented, shows that the only two affected cattle on the place are the two (Angus and Rosalind) found affected in August, 1893. The cattle that were killed last winter were Donna Juanna and Amberine. These cows were thought by Dr. Mackey and myself to have less of the disease at the time of examination than the others we killed. I have been asked by many how long the cattle we were killing

would live if not killed. These cattle are a fair example. Those we slaughtered would not have survived through the winter of 1893 and 1894, save perhaps Elva. Two others did not survive the winter of 1894-1895. Two others are yet alive and seem healthy. If they had not been handled exactly as they have been all these tuberculous cattle would have spread disease among the younger cattle, and it would have been impossible for Mr. Borden to have conducted his business profitably from that time to this. As Mr. Borden states in his letter, he has been able to obtain six calves this year from his thoroughbred bull Angus. While there may be some infusion of new blood through the cows, he has practically built up a new herd on the remnants of the old, and preserved the strain of blood he was so long occupied in establishing.

The loss to Mr. Borden and the State, through tuberculosis causing death of cattle, through the slaughter and separation of affected cattle, and the loss of milk, has been great, but has been lessened by handling the herd in a conservative manner. The preservation of the blood of the old stock and building of the new herd on the same lines has been a positive saving of qualities it has taken years to gain.

The ruthless destruction of all the tuberculous cattle of the State will not only entail a dead loss in milk and beef, but, what is of more value, of years of time, labor, and thought that have been exercised in raising milch cattle to the high standard now attained.

In view of the success of this experiment and the larger one conducted on the same lines by Bang, of Copenhagen, should the eradication of tuberculosis from blooded herds not be carried on with more circumspection and an endeavor made to save strains noted for their inherent valuable qualities?

More method, more earnest thought is necessary in prosecuting warfare against this disease lest the remedy destroy the fruit of years of painstaking selection on the part of breeders. The men engaged in it should have other requisites than mere ability to inject tuberculin, register high temperatures, and wield the pole-axe: discrimination, in deciding upon ascertained facts, and judgment, to be used in the preservation of the valuable qualities for which many strains are noted, are necessary.

TABLE I.—REGISTERED GUERNSEY HERD OF R. A. BORDEN.

Cattle injected at 10 P.M., August 29, 1893.

			Before	After					
			9 P.M.	8 A.M.	10 A.M.	12 M.	2 P.M.	3 P.M.	
Mignonne of Castel,	1,062	13 years.	101.6	100.8	101.1	102.1	101.9		
Donna Juanna,	2,661	9 "	101.6	100.6	102.3	104.2	105.8		
Amberine,	2,059	9 "	101.4	101.4	102.2	104.0	105.4		
Rosalind,	48,294	7 "	102.4	101.2	102.0	105.2	105.8		
Maid,	4,758	4 "	103.6	107.3	108.9	104.1	105.0		
Maud B.	5,131	3 "	103.6	107.3	107.0	107.4	105.6		
Elva L.	51,206	3 "	101.2	101.8	103.9	105.7	105.5		
Glenwood,	531	10 "	102.1	101.2	101.0	101.7	101.6		
Champion,	51,979	2 "	104.1	105.8	106.6	107.4	108.0	107.2	
Angus,		1 "	102.0	103.4	106.6	106.4	106.2		
Belle of the Glen, ¹		1 "	102.0	101.6	103.0	103.5	102.7	102.0	
Lady II. ²		1 "	101.8	101.7	100.8	100.8	101.3		
Bull calf,		6 mos.	102.5	101.5	101.6	101.6	101.8	101.5	
Heifer calf,		2 mos.	103.0	103.2	102.6	102.6	102.9		

These cows were injected with Sibbertz's tuberculin, using 0.25 cubic centimetre as a dose for an adult.

TABLE II.—MR. BORDEN'S NEW HERD GUERNSEYS.

Injected Sibbertz's tuberculin, May 19, 1895.

		Before				After					
		8 A.M.	12 M.	4 P.M.	9 P.M.	8 A.M.	10 A.M.	12 M.	2 P.M.	5 P.M.	8 P.M.
1	Cow,	101.5	102.2	101.3	100.8	101.2	101.4	101.2	101.3	101.0	101.0
2 ³	"	101.0	102.5	102.3	102.2	102.6	102.6	102.5	102.8	102.6	102.8
3	"	101.6	102.6	101.2	101.9	101.4	101.7	100.7	101.2	100.5	101.2
4	"	101.0	100.6	100.8	101.0	100.7	100.2	101.0	101.0	100.6	100.8
5	"	101.6	101.0	101.4	100.5	.....	101.4	101.2	101.4	101.3	100.2
6	"	101.7	101.2	101.1	101.4	101.7	102.1	102.0	102.0	101.6	102.4
7	"	101.3	100.3	99.2	101.6	101.2	101.4	100.7	101.6	101.0	101.2
8	"	102.3	102.0	101.8	101.1	101.4	101.6	101.0	101.2	101.0	101.1
9	"	102.3	102.1	101.3	101.0	101.8	101.7	101.8	101.0	101.0	101.8
10	Calf,	101.3	102.2	101.0	102.4	101.4	101.1	98.9	101.0	101.5	100.6
11	"	103.3	102.7	102.8	103.0	102.4	102.0	102.4	102.6	102.1	102.8
12	"	102.0	101.7	102.0	103.0	101.7	101.8	101.7	102.4	102.4	102.1
13	"	102.1	102.4	102.2	102.6	102.0	102.0	101.8	101.6	102.7	102.7
14	"	102.6	102.6	102.8	103.0	103.2	102.6	101.8	102.0	101.8	102.7
15	"	102.0	102.1	102.3	102.7	102.6	102.5	102.0	102.0	102.6	102.5
16 ⁴	Cow,	100.0	101.4	101.0	101.0	101.0	101.7	....	103.2	106.0	105.5
17 ⁵	Bull,	99.8	101.0	102.0	101.0	101.0	101.8	....	105.0	104.5	104.5

¹ Rosalind's daughter.² Lady Champion's daughter.³ This cow was heavy with calf and calved three days afterward.⁴ Rosalind.⁵ Angus.

On to Buffalo!

PATHOGENESIS OF DISEASE.¹

BY W. L. RHOADS, D V.S.,
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DURING yesterday's meeting I heard some of our friends say that they thought we should endeavor to keep up with the times. To do this we have determined the veterinary profession shall become the foundation upon which the science of protecting the public health will depend. We can best accomplish this object by a thorough and comprehensive study of the origin and development of disease or any departure from the state of health, either functional or organic. While the physician attempts to regulate and control the disease after it has found lodgement in our systems, the veterinarian strives to prevent its introduction into our bodies by purifying the meat-and milk-supply of the community, as they are probably the most potent factors in the development and transmission of disease. Meat left uncovered in the open air for a few hours in a moderate temperature soon becomes thoroughly infested with bacteria, especially if moisture is present. Milk is a most favorable medium for the nourishment and development of the germs of disease. These germs may come from the cow, as is the case with tuberculosis and parenchymatous mastitis, which have produced throughout a milkman's route gastro-intestinal catarrh; or the germ may be added to the milk from human sources, as in the case of scarlet fever, diphtheria, or typhoid fever. Every epidemic of typhoid in civilized and enlightened countries is now traced to infection from milk, or water and milk have proved to be the better media for its transmission. As a considerable percentage of the milch cows in a civilized country are consumptive, and as germs of this dread disease are transmitted through the milk from such cows to human consumers, it becomes necessary for enlightened and progressive boards of health to assume the sanitary supervision (through their veterinarian) of the milk-supplies of their respective communities.

I realize I have selected a subject far beyond the limit of my brief experience, and those practitioners who fail to keep abreast with the current veterinary and medical literature are losing much valuable information on this topic of most vital impor-

¹ Read before the annual meeting of the Pennsylvania State Veterinary Medical Association at Philadelphia, March, 1896.

tance. I feel no question of medicine in late years has occupied so much space and thought, or caused so much scientific research and experiment, as the origin, development, and communication of disease. We to-day have a knowledge, though yet limited, of organisms infinitely small, the existence of which was not suspected by the ordinary practitioner till within the last few years. When we consider that some of these germs when mature are but seven one-thousandths of an inch in length and their breadth scarcely one-fifth their length, our ignorance of them in the past is not surprising. We now feel that we understand fairly well the relation such organisms bear to our own as well as the organisms with which we have to deal in the lower animals in health and disease. It is true many of the lower organisms, both animal and vegetable, have for years been recognized as the direct cause of local maladies, both external and internal, for many of these parasites were of sufficient size to be in the aggregate seen by the naked eye or a low-power lens. When we realize that many of the most potent germs do not exceed $\frac{1}{1000}$ mm. in diameter, these bodies, so light and small, are easily influenced by movements of wind, rain, or change of temperature, coupled with the fact that no so-called case of spontaneous generation has withstood rigid investigation, we have a faint idea of the great good done by Bonnet, who between 1740 and 1793 advanced the theory of universal dissemination of seeds and spores, known as the pre-existing germ-theory (this is the oldest and probably the most widely accepted theory ever known in the history of medical science). During the same period Needham came to the conclusion that infusion of organic matter placed in hermetically closed vessels, after boiling, brought forth minute organisms; this is known as the vegetative or producing-force theory. The method of study introduced by Needham forms the basis of all subsequent experiments on this question as well as the culture researches in connection with the organisms of disease. Dr. Budd, in 1849, claimed the body was invaded by organisms which, under certain conditions and surroundings, caused infectious diseases. It is only of late years, in fact, since 1870, that we have been shown the relation of micro-organisms to those diseases which most closely interest the veterinarian, as anthrax, septicæmia, cholera in its various forms, lupus, glanders, rabies, pleuro-pneumonia, favus, and the greatest of all scourges, tuberculosis. Koch and Pasteur have done much in later years to enlighten us upon this subject.

The satisfying of all the requirements essential to prove a germ causative of a disease is difficult and has led to what may be termed a special branch of medical art.

Brefalo has observed that bacteria may divide once every half-hour, and their progeny repeat the process in the same time, thus producing in twenty-four hours segments amounting to many million spores, or resting cells; these are the smallest segments or cocci into which the filament at length breaks up. Yet it is questionable whether the bacteria suspended in the air are so plentiful as was once supposed. Formerly the great difficulty seemed to lie in distinguishing accurately between a germ and spore, the words being used in an indefinite sense. A *germ* is the first principle of anything that has life, whether animal or vegetable, a growing point, the embryo of a germinating seed, the exact point from which the life and organization of the future plant are to spring. A spore is a fecundated seed of a lower organism, and, though it may be practically considered the originator of a disease, in a true sense it cannot be, for the elements of which it is composed derive some consideration. Yet if the pre-existing spore is not present, it then becomes most difficult to account for the minute infusoria found swarming fully developed in putrefying fluid or flesh; in themselves scientifically healthy, though not rendered antiseptic, though they may be placed in antiseptic surroundings. It has been frequently shown that pure cultures of fungi grown on gelatin decompose, and the fluid in which they are soon swarms with bacteria.

The fungi being so minute, we have little true knowledge of them, and the infusoria may come from fungi through development by heterogenesis. Would this not lead us into the belief that the light-giving forces are in themselves spontaneous generators of disease from germs pre-existing? We are told to-day by scientists that light is a most potent factor in the destruction of ptomains. Prof. Ward, of England, goes so far as to assert, after experimenting with the electric light, that the light-rays and not the heat-rays are destructive to bacteria, and that of the different colored rays the blue rays are the most effective for this purpose, while another scientist claims the yellow or orange rays to be most conducive to the propagation of bacteria.

Anthrax was formerly attributed to a minute microscopic fly, which, on account of their great number, formed a blue mist in the atmosphere. This was the first disease to have conclusive

proof offered of its germ origin. The question of its etiological relation was placed on a scientific basis by inoculation with the pure culture of the anthrax bacillus.

To Pasteur belongs the credit for experiment or preventive inoculation with his attenuated virus in many diseases. Animals inoculated with the cultivated bacillus show immunity from disease when reinoculated with the deadly wild germ. The cause for this has not as yet been determined.

Metschnikoff, in 1884, advanced the theory that the white corpuscles eliminated the bacilli from the blood. Germs, as a rule, are very tenacious of life, and, while light is now believed to destroy them, it has only been a short time since scientists told us that boiling would destroy them, yet they are known to have withstood as low as 100° C. and as high as 110° C., the ripe spores showing the greater powers of resistance. They flourish best in moisture at a temperature of about 35° C., and readily live on remains of dead organisms, or, truly parasitical, being nourished direct from a living body. As a rule, their ends are rounded, and they frequently present a beaded appearance if not isolated; though their length may vary, they are always evenly proportioned, and I trust the future will give such magnifying powers that we may be enabled to see that each of these spores is an organism within itself, though communication with its neighbor may be essential to its propagation or development.

We are striving to learn the why and the wherefore, the cause and effect, and, with a proper knowledge of these, diseases may be treated intelligently, practically, and successfully. It is for the accomplishment of this end that animals, from the tiny mouse to the spiteful terrier, have been subjected to injections of different brands of germ-life, and while they may be dismissed slightly damaged or sent to their last reward, the slight inconvenience is not to be compared with the knowledge gained. The veterinarian to be abreast with the times must have in his medicine-chest an antitoxin for pneumonia, tetanus, tuberculosis, rabies, and many kindred diseases.

Disease is largely a problem of political economy, and is influenced by the ebb and flow of human affairs. An eve of prosperity greatly reduces disease; the people more readily recognize the difference between good and bad food, an adequate amount of rest, and more perfect sanitation. When the masses have become thoroughly aroused and realize these to

be essentials to health and longevity, then disease will become a brief, infrequent reparative process.

No living germ or disease can resist the antiseptic power of essence of cinnamon for more than a few hours is the conclusion announced by M. Chamberland as the result of prolonged research, and in M. Pasteur's laboratory it is said to destroy microbes as effectually as corrosive sublimate.

On to Buffalo!

ADDRESS OF PRESIDENT STEWART AT THE ANNUAL MEETING OF THE MISSOURI VALLEY VETERINARY ASSOCIATION, JUNE, 1896.

THIS meeting completes the second year of our organization, and we are pleased to think that the energy put forth in the eight quarterly sessions has redounded to the advantage of our members and has increased our professional interests in many ways. Each meeting has been fruitful in practical, helpful essays and reports; we have become better acquainted each with the other; we have grown to a better understanding of professional ethics, and have striven for a fuller application of their most wholesome precepts. It is very gratifying to note the general kindness which has characterized the interchange of thought in our discussions and the charity with which individual hobbies have been received. I sincerely trust this fraternal spirit will continue to grow in strength and shed its beneficent influence over this Association. It is indeed a great pleasure to be able to say to you that it has been a long time since an unkind or uncharitable word has been said in my presence concerning a member of this body, or, for that matter, concerning members of our profession anywhere.

Our membership is sufficient to maintain an active, aggressive organization, and we will discredit our opportunities if we fail to cultivate and disseminate a knowledge of the veterinarian and his capacity to protect the public health, as well as prevent pain and sickness in our domestic animals while conserving their financial value.

The public knows in a general way that the national government has established a sanitary inspection of meats in our large slaughtering establishments, and "thinks it a good thing," but

it does not seem to realize the necessity of inspection of the animals killed at the small or local slaughter-houses, and, yet more important, the inspection of the dairy and its products. It is properly within our duty to keep this subject before our respective communities and do what we can to awaken public interest along this line.

These are times of wonderful growth in veterinary science, and the thought often arises, Are we keeping up with the advance or are we retrograding? Are we gleaning with interest and eagerness the increasing knowledge and ripening thought along its many divisions? We are probably fairly awake on the subject of tuberculosis, because it has been discussed in every meeting of veterinarians held during the last several years. Are our ideas clear on other subjects of great importance? Dr. Parker's recent contribution on "Milk as a Factor in the Causation of Disease" is worthy of very careful reading, and leads to the far-reaching problem of cleanliness in the handling and preparation of all foods, and indicates that future meat- and milk-inspection must include possible contamination from extraneous sources as well as by animals afflicted with disease. It is positively necessary for us to read the current veterinary and medical literature if we keep apace; and I trust none have found money so difficult to get that he has not secured one, if not all, of our veterinary journals which are full to overflowing with the newest and best thoughts of our profession. Through their columns we learn something of the magnitude of the efforts being made looking toward the control and probable eradication of bovine tuberculosis in several States of this nation and in some European countries, and we must note the large number of veterinarians employed in this work. It is largely through our journals that we become acquainted with new remedies and new uses of old ones; that we are apprised of the advent of new diseases and the more successful treatment of old ones. How few of us feel that we have made as comprehensive and practical an application of asepsis and antisepsis in our daily practice as we might have done? I trust some member can report on the value and application of campho-phenique, hydrozone, trikresol, etc.; can report successful cases of healing without suppuration in castration and spaying, neurectomy and ablation of tumors, and other varieties of surgical cases. Is there any good reason why veterinarians should be content with old methods and results? With reasonable skill and modern methods a copious flow of laudable

pus should not be looked upon as a gratifying and desirable state in the healing process following surgical operations.

The wondrous development of serum-therapy is of such recent date and its possibilities so great that one is benumbed with amazement and incredulity when the facts are presented, if he has not read the journals. What with tuberculin and mallein, antitoxin for diphtheria and tetanus, vaccines for anthrax and hog cholera, etc., and, last of all, the application of electricity in the form of the x-rays for the destruction of pathogenic microbes and the diagnosis of fractures or the presence of tumors and foreign bodies hidden in the deep tissues, who is able to foresee what the future medical science will be; who can even fully comprehend its present state?

Association tends to quicken our perceptions and stimulates our zeal, and I feel sure we are encouraged with the hope of yet better and more certain results in the treatment of our patients and the preservation of the property of our clients by the intelligent use of the new agencies at our command.

We must certainly be grateful for the opportunity which our professional education opens for us to promote the public weal, and should be ever alert to help forward the movement so well begun in several States.

As witness of the progress being made you will recall the legislative enactments of several States, and the hopeful prospect of the army veterinary bill. A half-dozen energetic veterinarians in Virginia have secured a substantial law requiring a State certificate to entitle a veterinarian to practice, and are confident they will secure another law requiring and controlling dairy-inspection. Pennsylvania, New York, Ohio, North Dakota, and California have made laws governing practice. Several cities are enforcing quite rigid veterinary inspection of markets and dairies. Are we cultivating public opinion in our several communities? It is fair to presume that the people of Missouri and Kansas are just as anxious to ward off all diseases and protect themselves from financial loss through veterinary pretenders and sharks as other States, if they were aware of the sources of such dangers and losses. It remains for us to impart such information.

We are entitled to be proud of our profession, and I trust each one of us may add his mite toward its uplifting and its progress.

On to Buffalo!

PREVENTIVE INOCULATION AGAINST PLEURO-PNEUMONIA.¹

BY E. BIART, V.S.,
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THE first really scientific way of preventing the spread of contagious diseases among cattle was discovered by Dr. Willems, of Hasselt, Belgium, as early as 1852, but was only brought into actual practice in 1881. It was established on a solid basis in his laboratory (the stables of a large distillery). The young doctor inoculated directly into the steer the contagious pleuro-pneumonia virus, injected into the muscle or the subcutaneous cellular tissues. The germ produced, in addition to the local tumor, phenomena of severe intoxication, from which the animal died in a very short time. The doctor then decided to inoculate the same virus at the lower extremity of the caudal appendix. Then, again, the symptoms soon made their appearance after the insertion of the virus, but were of a mild type, and the animal soon recovered. It was then proved that the animal had become insusceptible to the disease, for, although being reinoculated with the virus several times, and in all regions of the body, there was no more sign of reaction, and the animal did not show any of the symptoms of the disease.

Dr. Willems first isolated the contagious pleuro-pneumonic microbe, and with the virus inoculated dogs, cats, horses, and other animals, and even human beings, without in a single instance producing the least inconvenience or symptoms of the disease; but when inoculated to cattle they would invariably show unmistakable signs of the disease. The disease, it was hereby proven, was consequently confined to the bovine race, not being communicable to other animals, whether ruminants or solipeds, nor even to man. From this discovery it resulted that the opinion of scientists generally was: That the flesh of animals slaughtered in the first stage of the disease is not deleterious to the public health, and can with perfect safety be used as food.

The virus was now discovered, but it was so violent that one drop of it, injected under the skin, would invariably cause

¹ Read before the June meeting of the Missouri Valley Veterinary Medical Association.

death; and it appeared that such a severe poison could never become a beneficent vaccine.

The discoverer resumed his work, and when after years of laborious researches he finally found the best method of gathering the vaccine, the period of the disease where it is at the same time the most active and the most innocuous, and the place of the body where you can safely inoculate, he generously gave the government the benefit of his experiences, without asking even for a reward.

The Department of Agriculture now appointed a committee of noted veterinarians to investigate the preventive mode of treatment. They consequently repaired to the doctor's home, whose stables were claimed to be proof against the disease, he having inoculated all of the animals with the pleuro-pneumonia virus. The doctor being asked to have introduced in his stable and mixed with his cattle other cattle manifestly diseased, and this in all stages of the malady, readily consented, and, although they were kept in constant and close proximity with one another for a great length of time, none of the inoculated cattle contracted the disease, nor did they show the least inconvenience.

Switzerland and Italy almost immediately accepted the system, which afterward proved effective and of great value. The practice is now generally adopted, and in those countries, wherever employed, contagious pleuro-pneumonia is almost a thing of the past. In Belgium, where the method originated, not a case has been discovered in the last two years.

Modus operandi. The serum which floats on the expressed fluids of diseased lungs, in the first or second stages of the disease, and this must be as fresh as possible, is the right virus for inoculation. The inoculation is done on the lateral faces of the extremity of the tail, by two incisions, about two inches apart. The skin is then raised and a small amount of the serum injected, the same as vaccination in the human; a few drops is sufficient. The animal can be turned out without further care; but when local inflammation becomes too intense, from fourteen to twenty ounces of salts must be given. Generally after ten days of inoculation, seldom before, and at the point of inoculation, will be seen an inflammatory engorgement; hard, hot, and very sensitive, very circumscribed, but in exceptional cases extending to a vast area of tissue, and this generally becomes gangrenous. In ordinary cases this engorgement gives rise to pustules, throwing out serum and covered with scabs, which dry

up, but often fall off and leave an ulcerous wound, which finally heals completely without care. In order to have a successful inoculation these pustules should appear, or at least the inflammatory engorgement. Animals in which no reaction has taken place should be inoculated in from three to four weeks later. Inoculated animals must be closely watched from the fifth or sixth day after the operation, and as soon as tumefaction is seen at the seat of inoculation a long, deep incision should be made, and this should bleed freely and suppuration encouraged. If it is noticed that the end of the tail becomes gangrenous, it should be amputated till in the sound portion, as this is the only way to stop the invading process of the disease. By carefully carrying out the above instructions failures are almost impossible.

On to Buffalo!

RESULTS OF RECENT REMARKABLE EXPERIMENTS WITH YOUNG DOGS.¹

THE results of some remarkable experiments concerning the relations of the structures and functions of the mind have recently been announced by Professor Elmer Gates, a physiologist, who has for several years been making elaborate studies both in Washington and Philadelphia.

By training pet animals, especially dogs, to perform various difficult tricks, Professor Gates developed many strange abnormalities in the gray structures of their brains. In this manner he has not only located the exact parts of the brain in which even the most intricate emotions originate, but has convinced himself of a method by which the brain of man may be built entirely anew. His laboratory is one of the most interesting institutions of the kind in the world. Various instruments have been erected in it for aiding the professor in his peculiar training. Some of these work by electricity, a slight shock from a battery giving such a gentle reminder as is generally administered by the whip.

In one experiment he trained dogs so skilfully that they were able to distinguish colors, one from another, and associate them

¹ From the Philadelphia Times.

with action. Seven little shepherd puppies were kept in a totally darkened room from the minute they were born until they became nine months old. So careful was the professor lest even a spark should enter this room that he placed three different doors in the approach to it. A second group of little shepherd dogs of the same age were allowed to lead a normal life. A third group of the same age and stock were put through an interesting course of sight-training. To accomplish this the floor of the hall leading to one room of the laboratory was covered with square metallic plates, separated each from the other by insulation. These, with the exception of a few, were connected with the current of a strong electric induction-coil. Those not connected were irregularly scattered and painted a like color. The others were painted in various other shades, giving the whole floor a checkered appearance. At first when the dogs followed the professor to his laboratory they had their feet uncomfortably tickled, not knowing the proper combination. In a few months, however, after being trained a number of hours each day they gradually learned the proper plates, no matter how their positions were changed. Within five months the professor had perfected this unique education to his satisfaction.

Another interesting method of developing the color bumps was by feeding the same dogs meat placed under different colored pans, which had to be turned over with their noses before the food could be discovered. Each pan was rubbed with meat on the outside that they might not be led to the proper pan by smell. Each was shown that the yellow pans only contained the meat. For several weeks, however, they continued to turn over each pan indiscriminately until finding the dinner. After six weeks the proper places were found the first time, no matter in what manner their positions were altered. By placing the food under pans of other colors they soon became able to discriminate between seven different shades of red, several of green, and of still others.

The three groups of puppies when nine months old were chloroformed and their brains and spinal cords studied under powerful microscopes and by applying various chemical tests. Those kept in a dark room all their lives showed a total absence of development in the portion of the gray exterior covering, or cortex, which Professor Gates previously knew to be occupied by the "seeing area." This was totally lacking in cells. The

group which had led a normal dog's life had much greater development in this "bump of sight," as the common phrenologist would call it. The cortex was thicker, more thickly supplied with arteries and veins. It was more gray in color, and contained cells. But the seeing area of the dogs highly trained showed a wonderful development. The cortex was abnormally thick and exceeded those of the normal dogs in the number of cells and bloodvessels. The cells were much more complex in form. In short, in that portion of the brain where originates the sense of sight the trained dogs were found to be twenty-five times as complex as the group which had led a usual life. It therefore seems very apparent that similar training applied to human beings deficient in brains might accomplish untold wonders in a few years, if only nine months would improve a separate portion of a dog's mind twenty-fivefold.

Professor Gates has obtained equally wonderful results not only with dogs but with other animals. He grouped some of these so that part were deprived of hearing, while the others underwent a series of ear-trainings quite as interesting as the sight-exercises. Practically the same results were obtained upon examining the parts of the brains employed for observing sounds. Other tests with the senses of smell and taste showed the same results. And going still deeper into this mysterious science, he found that rabbits made to see only one color all their lives had brain matter in the color-seeing regions chemically different from that of other rabbits subjected solely to another shade.

One dog was made to go through certain exercises daily with his right leg, another one with his left leg. On examining their brains he found the former to have a marvellous development in what is known as the "right-leg area," while the other had the same abnormal condition of the "left-leg area." One dog was prevented from walking all during life. Another was made to follow a huckster's wagon through the streets every day. The difference in their "leg areas" was as great as that in the "color areas" of the dogs confined in the dark and those trained with the pans, etc.

But still more marvellous! Certain dogs were made to go through leg-exercises in response to certain sounds, while others did the same on being shown certain colors. In the first lot there was an unusually thick development of the fibre connecting the leg area with the hearing area, and in the

latter there was the same between the leg area and the seeing area.

The fact that fibres became enlarged between areas of the brain exercised sympathetically convinces him that our memory passes from one event to another through a continuation of these fibres. Thus it would seem that these various compartments each contain an electric battery for imparting a separate action or thought, and that when several of these are used at once they develop wires connecting one with another. When our recollections, therefore, are carrying us back from one line of thought to another, these memory strings doubtless are struck in familiarly harmonious chords.

Professor Gates further believes that there is a chemical basis for both right and wrong. Good and evil thoughts produce characteristic brain structures. If his studies are applied to the fast developing medico-legal sciences, it would appear that before many years there will be little guesswork in determining the life-histories of executed criminals.

But Professor Gates would apply his new discoveries to education. He would develop brain-architects rather than brain-stuffers. Every time we indulge in certain thought or action, its corresponding section of the brain, from which it is derived, becomes more developed. Hence it is easier the next time to exert the thought or prompt the action, just as it becomes easier and easier each day to carry a heavy load. In the first instance the muscles—so to speak—of the mind are enlarged; in the second the development is in the muscles of the body. A bad habit, therefore, is mental strength developed over the wrong area. The bad “bump” works more readily than the good one, just as a muscular arm is more active and willing to strike than a weak one.

On to Buffalo!

The Health Department of the City of New York is now ready to supply tuberculin and mallein to the veterinary profession. They have recently issued circulars instructive of the application of these two tests, a copy of which will be useful to the daily practitioner, and which can be had for the asking.

THE LIVELY FLEA: A WONDERFULLY CON-
STRUCTED AND PUGNACIOUS LITTLE
PEST TO HUMANITY.¹

THE flea is an insect peculiarly difficult to combat, on account of its strength and agility and the fact that it readily transfers itself from the person to an inanimate object. It is less of a reproach to be troubled by fleas than by any class of parasites. These insects are found in all walks of life and do not hesitate to attach themselves to ladies of the highest social position.

Nearly every family of animals seems to have its own particular flea, which does not trouble any other family. The furry animals are much more frequented by fleas than man, and fortunately these fleas seldom flourish upon the human frame.

Cats and dogs are always well provided with fleas, and so are moles, squirrels, mice, rats, and rabbits. These fleas have lesser fleas to prey upon and bite them, and so proceed *ad infinitum*, as Dean Swift has remarked.

The human flea when studied scientifically is truly a beautiful and interesting object. In shape it is flattened from side to side and has a high-ridged back. The body is covered with a hard, red, slippery skin, rendering it extremely difficult to hold between the fingers and crush.

It has three pairs of legs, which increase in length from before backward, giving the insect somewhat the aspect of a kangaroo. The first joint of a flea's leg, that nearest the body, is enormously large, and enables it to perform the leaping feats for which it is famous. The legs terminate in long, curved claws, of great use in aiding the insect to work its way through the garments of its host. They are covered with bristly brown hairs.

The flea's mouth is one of its most admirable features. It is of the type known as suctorial, being adapted for the swallowing of liquid food obtained by a process of perforation. It consists of one single organ and four pairs of organs. The upper lip is a saw-edged bristle, perforated by a minute canal. The mandibles pointed downward on each side of it are two straight blades, provided with six hundred sharp little teeth. The maxillæ are two sharp-pointed triangular pieces, with a knife-like edge on one side.

¹ From the New York World.

The human flea is a very pugnacious animal, and captured specimens can be made to give a pretty pugilistic exhibition. A scientist speaks of two females whom he had put in a glass tube where they were to deposit eggs, as "becoming rampant, confronting one another like microscopic kangaroos."

The flea has the power of emptying the contents of its stomach whenever an opportunity of obtaining a better and a fresher supply of blood presents itself.

Unoccupied rooms will sometimes be found to contain many fleas, showing that they can subsist for a long time without human blood. They live in hope.

The human flea is an epicure. It gives little trouble to persons with tough, dried-up skins, and shows great judgment in selecting young women and children with nice, tender skins.

The flea's eggs are laid not upon the human body, where it spends most of its life, but upon rugs and mats and in dark places where there is plenty of dust and dirt. It is therefore a matter of ordinary cleanliness to keep the insects in check. Why there should be great epidemics of fleas in some years is a mystery.

On to Buffalo!

THE DEAD HORSE: HOW ITS CARCASS IS UTILIZED IN THE MANUFACTURING AND DOMESTIC ARTS.

HORSES that have served useful and honorable careers of twenty to thirty years are fit only for the chemical process. When the retired animal is dragged in, it is first relieved of its hair by a shaving process. The tail and mane are especially valuable, and from these is made the haircloth of commerce. The short hair taken from the hide is used for stuffing cushions and horse-collars, and thus the dead are made to minister to the comfort of the living.

The hide of the horse is quite valuable and the leather known as cordovan is made from the skin over the rump. This leather

¹ From the New York World.

is used in the manufacture of high-class hunting and wading boots, and it can be made impervious to water. The other leather is soft and is used mostly for slippers and heavy driving-gloves. The hoofs of the animal are removed, and, after being boiled to extract the oil from them, the horny substance is shipped to the manufacturers of combs and what is known as Mikado goods.

Next the carcass is placed in a cylinder, and cooked by steam at a pressure of three atmospheres. This separates the flesh from the bones. The leg-bones are very hard and white, and are used for handles of pocket and table cutlery. The ribs and head are burned to make boneblack after they have been treated for the glue that is in them. In the calcining of these bones the vapors arising are condensed and form the chief source of carbonate of ammonia, which constitutes the base of nearly all ammoniacal salts. There is an animal oil yielded in the cooking process which is a deadly poison, and enters into the composition of many insecticides and vermifuges.

The bones to make glue are dissolved in muriatic acid, which takes the phosphate of lime away; the soft element retaining the shape of the bone is dissolved in boiling water, cast into squares, and dried on nets. The phosphate of lime, acted upon by sulphuric acid and calcined with carbon, produces phosphorus for lucifer matches. The remaining flesh is distilled to obtain carbonate of ammonia. The resulting mass is pounded up with potash and then mixed with old nails and iron of every description; the whole is calcined and yields little yellow crystals—prussiate of potash, with which tissues are dyed a Prussian blue and iron transformed into steel. It also forms cyanide of potassium and prussic acid, the two most terrible poisons known in chemistry.

In the course of a lawsuit in St. Louis several years ago it was put in evidence that the River Rendering Company, which had the contract for the removal of dead animals from the city streets, made a clear profit of twenty-four dollars on each horse carcass that they handled.

On to Buffalo!

Dr. J. S. Cattnach is spending his summer vacation at Newport, R. I.

ABSTRACTS FROM FOREIGN JOURNALS.

UNDER THE DIRECTION OF

J. PRESTON HOSKINS, PRINCETON, N. J.

IS MALLEIN A SPECIFIC AS A DIAGNOSTIC AGENT? By G. Leo HagenBurger, M.S., D.V.S. All of you are familiar with the use of the above in diagnosing farcy or glanders, especially in its latency, so I will refrain from going into any details relating to its virtue in diagnosing and treating the disease.

Having had an opportunity (some six years ago in New York City with a large railway company) to see quite a number of horses so affected, I recalled the theories of Senner on immunity of contagious diseases, and experimented with the serum of blood taken from cattle and dogs.

The injections at that time gave me little or no satisfaction; want of time and proper facilities compelled me to abandon it. Some sixteen months ago I had occasion to see a few cases in Brooklyn with some other practitioners, which were typical cases of glanders. Others I had seen in Maspeth (Queens County); another near Freeport, L. I. The following results show that mallein is *not the only specific in producing* a rise of temperature after injections:

Extract was of blood taken from a steer, 3j diluted in 3iv of water, and injected under the skin, the usual time allowed, and temperature then taken, showed a rise from 2° to 3° and 4° in all cases so injected. The three animals on post-mortem showed extensive lesions of the disease in the various organs. One horse injected with mallein four days after the first injection (extract of blood), and the same febrile symptoms appeared.

I have injected about ten horses in good health with the above, and no symptoms of any kind was noticed.

Then pursuing a different way, namely, using a more homogeneous product of the horse, an extract of bacillus coli communis, which was prepared by a friend of mine in a chemical laboratory.

One cubic centimetre being injected in a suspicious case, which was not typical, an examination showed a marked rise of temperature. The same animal two weeks later (after having had a purgative and starvation diet), being injected with mallein,

reacted in the same way, and was consequently destroyed, and proved to be glandered. This leads me to assume that mallein is not a specific, and that we can get reactions from different heterogeneous bacteria in the form of an extract to diagnosticate the latency of the disease. If some of my brethren have an occasion to try it, I would like to hear the result, as the number of my cases has been limited, and I would therefore invite the aid of some gentlemen interested in this particular field.

CONTAGIOUS DISEASES TRANSFERRED TO MANKIND. According to the statistics of the Imperial Hygienic Bureau for 1894, it is reported that in Germany apthous fever was transmitted to mankind in many cases by using unboiled milk obtained from cows affected with apthous fever; also anthrax in 109 cases. In most instances the infection occurred by slaughtering or skinning the animals; glanders in 3 cases, which ended fatally.—*Tierärztliches Centralblatt.*

APHTHOUS FEVER IN A FŒTUS. Districts-Veterinarian Bodenmueller discovered that the virus of apthous fever can be transferred by the congenital blood to the embryo. An outbreak of apthous fever occurred in a stable containing twelve cows, of which one was about to calve in a few days. On the fifth day the cow gave birth to a normal calf, but showing in mouth and between the toes the characteristic symptoms of apthous fever. After the lapse of a few hours the calf died.—*Wochenschrift fuer Thierheilkunde.*

IDIOSYNCRASY AGAINST MORPHINE.¹ Frœher has informed us that cattle show after injections of morphine, when it is used to quiet in cases of prolapsus uteri, disagreeable excitement and augmented pressing sometimes. Prof. Albrecht has never noted any good results of morphine in such cases, and saw a case a short time ago affirming Frœher's observations. A fat cow, six years old, weighing 1200 pounds, was put in the obstetrical section of the Veterinary Academy for delivery. On the 7th of June premature parturition was suspected, and occurred on the 8th of June. The afterbirth, although only taken fifty-six hours afterward, was so decomposed that fragments of it stayed in the uterus. On the next day violent

¹ Abstracted for the JOURNAL by Dr. Otto G. Noack, Reading, Pa.

straining set in; the cow received a hypodermic injection of morphine, 1 gramme, at 12 o'clock noon. About twenty minutes later the following symptoms appeared: excitement, violent bellowing, and then moaning, continuous bellowing, putting down and lifting up the diagonal feet at the same time. Temperature was 40.5° C., head warm, pupils enlarged, pulse 90-100, respiration 30-35 in a minute. The quantity of milk during this time was diminished; the quantity of cream was not half as much as prior to attack, and did not increase afterward. The eyes of the animal were covered, ice was put on the head, and 50 grammes of chloral hydrate were given. About 11 o'clock P.M. the cow was quiet, and the straining had disappeared.

In Japan most of the horses are shod with straw. Even the clumsiest of cart-horses wear straw shoes, which, in their cases, are tied around the ankle with straw rope, and are made of the ordinary rice-straw, braided so as to form a sole for the foot about half an inch thick. These soles cost about a halfpenny a pair. In Iceland horses are shod with sheeps' horn. In the valley of the Upper Oxus the antlers of the mountain deer are used for the same purpose, the shoes being fastened with horn pins. In the Soudan the horses are shod with socks made of camels' skin. In Australia horseshoes are made of cowhide. A German not long ago invented a horseshoe of paper, prepared by saturating with oil, turpentine, and other ingredients. Thin layers of such paper are glued to the hoof till the requisite thickness is attained, and the shoes thus made are durable and impenetrable to moisture.—*Horseshoers' Journal*.

PROLAPSUS VAGINÆ IN A FILLY. By A. Van Heusden On the 22d of October, 1895, my services were called to a filly $1\frac{1}{2}$ years old. She had been bought at a sale about two weeks before, and then placed in a pasture in the neighborhood of Nimeguen. Shortly before it left the horse-market the attention of the new owner was called to a swelling about the size of a closed fist, which appeared now and then outside of the vulva. The owner thinking it was of no importance put the animal out to pasture. On the 22d of October the owner noticed that the swelling had become much larger, and that the filly strained very much; for this reason he called in my assistance. When I visited the patient I found a dark-reddish black mass outside of the vulva; the animal was straining

severely, her respiration was frequent, the pulse increased, and she showed colicky symptoms. On investigation it became clear to me that it was a case of prolapsus of the vagina, and the intestines were present in the prolapsed parts. On pressure the part became the size of a man's head, a part of the rectal mucous membrane also presenting. With gentle pressure the vagina was replaced, but reappeared again immediately afterward. The wall of the vagina was deeply torn at several places, so that I expected the intestines would present every minute. On further investigation it appeared that almost the whole vagina was involved. On the upper wall I could get forward about four cm., but was stopped then by the prolapsed parts. From under it was possible to press even back of the opening of the urethra. In view of the fact that a large part of the wall of the vagina was already necrotic, I gave a very unfavorable prognosis, and the owner concluded to have the animal killed. On post-mortem examination I found that in addition to the severe necrosis the lower wall of the vagina had become abnormally thick. Both horns of the uterus were perfectly normal, so that through the infection the transition from the vagina into the uterus could be more clearly perceived than elsewhere. In my opinion there was first a case of chronic partial prolapsus of the vagina, which suddenly became acute and developed necrosis. How long the prolapsus had complete existence is difficult to say. The former owner probably sold the animal on account of the defect. The present case seemed to me of importance, because in the literature on the subject so far as it is accessible to me only two cases of prolapsus vaginæ in the case of young mares which have never borne colts have been mentioned: One by Koepke in the *Berlin. Archiv*, 1891, and one by Münch in the *Wochenschrift von Adum*, 1891. Koepke saw a case of prolapsus in a three-year-old mare, which was about the size of a man's fist, and which presented suddenly and then disappeared of itself. Münch describes a chronic prolapsus in a four-year-old mare which had never been pregnant. The occurrence of the trouble in such a young mare as the one mentioned is, as far as I know, without a parallel.—*Tijdschrift voor Veeartsenijkunde*, January, 1896.

STONE IN THE BLADDER OF A SHE-ASS. By W. C. Schimmel. On the 13th of November, 1895, a she-ass, nine years old and 1.10 metres high, was received at the Royal Veterinary School

A letter, from a colleague, which accompanied the animal contained the information that she was suffering from stone in the bladder. The animal was in good condition and had a normal appetite, but strained severely on passing urine, so that the vaginal and even the rectal mucous membrane was to a certain extent protruded. With this a small quantity of muddy, slimy urine was emitted, which sputtered out in all directions. On examination the vaginal mucous membrane was found to be swollen and warmer than usual; the opening of the urethra was distended so that a finger could easily pass. The *collum vesicæ* was not closed; immediately in front of it, partly in the neck of it, a rough, hard stone could be felt; this filled up almost the entire space and could not be moved. On the under side the finger could pass, but on the upper side the stone was held fast in the wall of the bladder. The front end could not be reached. However, we finally succeeded by passing along the lower wall of the vagina; to judge from this the stone must certainly have been 10 cm. long. When the finger-ends were brought in front of the stone, this together with the bladder could be pressed so strongly toward the rear that it became visible in the vaginal opening. The opinion that the stone could be removed without difficulty was not confirmed. At first we tried to extract it with the hand while the animal remained standing. Two fingers could be very easily passed into the bladder, but it was impossible to grasp the stone. With the different kinds of stone-forceps (pincers) we had no better success; the *collum vesicæ*, although it was quite wide, could not be sufficiently dilated to allow the forceps to pass when they were opened so as to grasp the stone, or when this had been somewhat squeezed, then every effort to extract it was fruitless. The animal was then laid upon its back and another effort made to remove the stone; an incision of considerable size was made in the upper wall of the urethra in order to gain more room for forceps and stone, all, however, without the desired result. In the meanwhile the stone was loosened from its bed so that it could be turned over. Finally we succeeded in pushing off a piece of it; but further efforts to crush it were fruitless. As a result of these manipulations the mucous membrane of the vagina and urethra had become much swollen, and obstructed the use of forceps and fingers and rendered procedure difficult. The constant straining of the animal also impeded our efforts. When after two hours of effort both extraction and crushing seemed

impossible, a large incision was made in the collum, so that Bouley's forceps could be used and the stone extracted. A small piece of tissue adhered to it, which gave rise to the belief that the bladder was perforated. This opinion proved to be true. The patient died the following morning. A close examination showed a chronic inflammation of the bladder with thickening of the wall except where the stone had lain; here it had plainly become thinner. The stone had grown into the upper wall, and in one place so deeply that in the efforts to loosen it from its surroundings the wall was perforated before the separation of the stone could be effected. Through this opening urine, gravel, etc., had found access to the abdominal cavity and set up peritonitis. The right kidney was much larger than the left; the capsule could only be stripped from it with great difficulty, which pointed to an interstitial affection. A part, however, was normal, and could still perform its function properly. The left kidney was small; on cutting it open the cavity was found greatly enlarged, and in consequence the medullary substance was absent. Only a part of the cortical substance was present; it was somewhat hydronephrotic. The part of the stone which was removed unbroken had a length of 6 cm. and a circumference of 13 cm. Its weight together with the small pieces which were collected amounted to 127 grammes; about one-third was broken off, so that the almost cylindrical stone must have been 9 cm. long and may have weighed 190 grammes. It was rough, porous on the upper side, dark brown in color, and seemed to have been formed by the aggregation of many small stones. A formation in layers was not noticeable. It belonged to the so-called *sedimentary stones*, as Fürstenberg and Röhl have designated them. On the upper surface a part was smooth and still covered with mucous membrane; here it had been firmly attached to the upper wall of the bladder. The stone contained CO_2 , Ca, Na, HCl, H_2CO_3 , and H_3PO_4 ; it consisted for the most part of calcium carbonate, besides calcium phosphate and oxalate. According to Röhl (*Pathology and Therapeutics of the Domestic Animals*, vol. i. p. 347), sedimentary stones have a form which correspond to that of the bladder, arched below and horizontal above. Our stone differed notably from this, inasmuch as it was almost cylindrical. The lack of a layer formation, however, brings it in this class and not under the white or yellowish-white stones, which develop more slowly, are more solid, and have either compact

layers, like the white stones, or alternating layers of a darker and a softer lighter shade, as in the yellowish-white stones — *Tijdschrift voor Veeartsenijkunde*, January, 1896.

FISTULA OF THE MATRIX. By T. A. J. Beel. On the 17th of September, 1895, my aid was asked in the case of a milch cow about four years old which had a swelling in the region of the left groin. Round about the swelling an œdema was noticeable which extended as far as the median line of the belly and further toward the front. Inasmuch as at least in one place abscesses with a break behind them (opening) were present, I concluded not to open them for the present, but pursue an expectant course. The swelling itself was anointed with laurel salve. On the following day it had become twice as large. The œdema had spread over the whole left half of the belly to behind the elbow and was hot and very painful. A puncture, repeated twice, of apparently fluctuating spots yielded no result. The left half of the udder was very much swollen. But all remained to the left of the median line. The treatment was continued until the 23d of September. Then the swelling increased a little, while movement on the part of the animal was painful and stiff, and evacuation had almost ceased. After Priesnitz's poultices had been applied for two days without result, suddenly with increase of the swelling, that well-known crackling (rumble) of gases under the hide began, originating in the region of the groin where the swelling had its origin and extending over the shoulder-blade, neck, etc. Besides this the dashing (trickle) of fluid could be noticed. The owner decided to kill, and the post-mortem examination resulted as follows: The skin over the left half of the belly could hardly be loosened from the swelling beneath. Where this close connection was severed by the knife, a number of little yellow knobs could be seen about the size of millet-corn, apparently little tubercles. When the skin had been entirely removed the swelling was blue and variegated. A section lengthwise, about four fingers deep, showed a spongy tissue containing air, resembling a transverse section of a lung which had been partly drained of blood. Here also, from the cavities, which were of varying dimensions, fluid and foam bubbled up here and there. Between these cavities larger and smaller tubercles were found. After this thick layer had been passed a large cavity containing fluid was found, out of which about 15 litres of reddish-yellow, odorless, clear liquid

flowed. It had evidently been collected between two layers of muscles, and the former puncture had failed of its purpose because the trocar did not penetrate deep enough. On opening this cavity a large quantity of odorless gas escaped. In order to gain a better view of the conditions it was decided to open the abdominal cavity first. The abdominal organs were normal, very anæmic; the spleen somewhat enlarged. The matrix attracted attention at once. It looked dark-red, was soft to the touch, and the left horn, which was larger than normal, had become adherent to the surface of the abdomen which corresponded to the swelling. On closer examination the left ovary appeared to be enlarged by a tuberculous process which evidently caused the adhesion between the horn of the uterus and the abdominal wall. The uterus on being opened lengthwise showed thickened walls, while the surface had a gloss-like appearance. The inner cavity contained liquid similar to that in the cavities mentioned above. Where the uterus and abdominal wall joined there was a large opening through which two fingers could pass, the edges were entire, and it communicated with the accumulations of fluid between the different layers of muscles. The fluid was thus produced in the matrix and passed through the fistula toward the outside. That gas had found its way later into the swelling is explained also by the passage of gas through the mouth of the matrix, which appeared, even at the post-mortem, not entirely closed. The whole course of the disease can be imagined as follows: The left ovary had first been infected with tuberculosis, through which the attachment to the abdominal wall was brought about and the spread of tuberculosis to the abdominal muscles. At the place where the two walls had grown fast together a tuberculous abscess formed which discharged toward the matrix and left behind the opening about the size of two fingers. The diseased wall of the matrix, which secretes liquid under such conditions, furnished also in this case the large quantity of fluid stuff which found an outlet for itself through this opening and so flowed in between the muscular layers. That these were tuberculously affected at several places and had grown together explains also why there were several cavities in which fluid stuff was present. The apparent improvement in the condition of the animal at times is perhaps to be explained by the flowing back of the fluid from the cavities to the matrix whenever circumstances favored it, as, for example, in lying down, when it could easily take place in

consequence of the increased pressure on the upper surface of the fluid. That both the fluid and gases were odorless was explained through the entrance of air from without shortly before. The mouth of the matrix was evidently closed for a long time, but finally opened in consequence of the general weakness of the body.—*Tijdschrift voor Veeartsenijkunde*, January, 1896.

ON THE USE OF TURF AS BEDDING. On account of the dearth of straw during the year 1893 the authorities of the central depot of Swiss cavalry decided to utilize turf as bedding. During a year and a half turf was used for five hundred horses. The preference was given to Dutch turf, containing long vegetable fibres, having a clear color and being as dry as possible. This turf (or peat) contains about 20 per cent. of humidity, 1.5 per cent. of ashes, and a little azote. The bed should be the object of much care, and the dung should be removed as often as possible; at first about 80 kilos of turf were put in for five weeks; daily 2.5 kilos of dry turf were added, so that the whole bed was renewed at the end of six weeks. Each horse used, therefore, 160 kilos, or 2.5 kilos per day; in estimating the cost of 100 kilos at 3.80 francs, the cost of bedding is 10 centimes a day for each horse. It goes without saying that these figures depend upon the care taken in the expenditure of bedding, the price of turf, etc. The chief advantage resulting from the use of turf consists in its great power of absorption for liquids and ammonium salts. When it is dry it absorbs about 70 per cent. of liquid, or double as much as straw. The disinfectant qualities of this bedding can no longer be denied; the author believes he can attribute to the use of this bedding the diminution in the number of cases of pneumonia occurring in the depot during its use. As an offset to these advantages M. Schwendimann mentions some disadvantages. The hoofs soften and become brittle, the sole too flexible and sensitive, the frog rots; these effects are due to the action of urine and ammonia, two destroyers of horn. On the other hand, the horses placed upon turf without straw could not eat, grew languid, learned to be vicious or to tease their neighbors. These were the reasons which led the authorities to discontinue its use. M. Schwendimann is of the opinion that a mixed under-bed of turf and a covering of straw on top could be utilized, as is practised in the cavalry school in Hanover.—*Schweizer Archiv*, March and April, 1895; *Annales de Med. Vet.*

TWO CASES OF RUPTURE OF THE UTERUS. By M. Giovanolli. Circumscribed lesions of the matrix which do not penetrate deeply are rather frequent in the cow and often pass unnoticed; rarely they cause an infectious metritis. These lesions are produced especially during delivery; they are met with, however, before the foetus has arrived in the vagina. The author was called in to a cow which had passed the waters several hours previous, and which did not seem to be suffering severe pain; she looked at her abdomen from time to time and moved her tail. On investigating with the hand, M. Giovanolli affirmed that the mouth of the uterus was well opened and that the nose of the calf and two of the legs had entered it; he asserted that everything presented normal conditions. The examination had caused several violent expulsive efforts on the part of the animal. At the end of ten minutes the author again introduced his hand into the genital passages; but, to his great astonishment, he could no longer feel the calf. On the contrary, he found a transverse rent on the lower wall of the uterus through which the foetus had passed. The animal was killed, when a large laceration was found situated about five centimetres from the neck of the uterus; toward the middle the edges of the rent were cicatrized, but elsewhere they were bleeding. M. Giovanolli thinks that a small laceration existed previously, and that it was enlarged by the expulsive efforts. In a second case the subject was a cow two months overdue. On examination the author drew out a small foetus accompanied by envelopes; wishing to disinfect the matrix, immediately he discovered the existence of a laceration on the upper surface about four fingers long; the matrix was completely empty. On account of the position of the laceration he advised the owner to preserve the animal, which recovered, became pregnant again and was delivered normally the following year. The author thinks that in consequence of the weight of the foetus a sort of shock or violent tension is produced at the level of the neck at the moment of uterine contractions; this shock could cause the wall to become thinner, and under the influence of special mechanical conditions and violent contractions a rent more or less extensive is produced.—From the *Schweizer Archiv* in the *Annales de Méd. Vétérinaire*, for Jan. and Feb., 1896.

VARIABILITY IN THE LENGTH OF TAIL IN THE DOG. By the same author. The author cites two singular cases: the first

that of a bitch with her sixth litter of puppies; the mother had a short tail, but in each litter some of the young had long tails and others short ones. In the second case the mother had a tail of normal length; she was lined by a dog with a short tail; among the ten puppies only two had long tails.—*Ibid.*

PALPATION OF THE LYMPHATIC GLANDS ACCESSIBLE TO THE TOUCH AS A CLINICAL DIAGNOSTIC OF TUBERCULOSIS. By Mr. Paul Godbrille, Sanitary Inspector. If the tuberculin-test constitutes a valuable means of establishing the diagnosis of tuberculosis it should not be regarded as the only means, and other clinical tests which are at our disposal ought not to be wholly laid aside. Tuberculin is sometimes found to fail in the case of animals in which the disease is far advanced, and, on the other hand, there are circumstances where the veterinarian finds it difficult to follow up himself the rise in temperature; for example, the distance from his patient or the press of business which leaves him very little time. The examination of cattle in the markets no longer permits of the tuberculin-test. In these cases the practitioner must have recourse to all the means of investigation at his disposal, and very often by an analysis deduced from the symptoms he will succeed, by a process of elimination, in establishing a probable diagnosis. Ganglionic infection by its external manifestations often affords us aid, and ganglionic hypertrophies are of diagnostic import. Even in commencing hypertrophy these ganglions, concealed in the midst of the organs which lie near to them, reveal to the touch their pathological condition. It is for the purpose of indicating the mode of examining the different ganglions accessible to the touch and of judging of their condition that Mr. Godbrille has published the result of his investigations made during five years as cattle inspector in the market of La Villette. Normally the lymphatic ganglions are of elastic consistency and scarcely perceptible; under the influence of tuberculous infection they become enlarged, nodulated, and indurated; they are of woody consistency, and become soft in the centre, sometimes undergoing purulent disaggregation. The superior cervical ganglions and the guttural parotidean are most often infected. (1) The *submaxillary* ganglion situated at the edge of the bone on a level with the entrance of the sterno-maxillary muscle between the tendon of this latter and the maxillary gland has the volume of a dried almond covered with

the woody rind. (2) The *protidean* ganglion, flattened into a strip running obliquely along the posterior surface of the neck of the condyle of the maxillary. It is covered by the parotid gland, but its lower extremity stretches out a little beyond it. (3) The *retro-pharyngean* ganglion, as large as the submaxillary, is situated beneath the "apophysis" across the atlas. (4) The superpharyngean or subsphenoidal ganglion, of the size of a dried almond not decorticated, supported by that of the opposite side, as if it were hung between the awl-shaped apophyses of the temporals beneath the mammillated eminences resulting from the welding of the basilar apophysis of the occipital with the sphenoidal. The examination of the maxillary ganglions can be made in a very simple way, but one must guard against confounding the hypertrophy of the same with goitre, which consists of an oblong tumor lying against the larynx. The parotidean ganglions can be felt by squeezing between the thumb and the other fingers the subcutaneous mass situated at the base of the concha and formed by the parotid and the annexed ganglion. The examination of the retro-pharyngean ganglions is important because these organs are often the seat of tuberculous indurations; they may even acquire the size of an apple. In order to feel them it is necessary to thrust the four fingers of each hand along each side of the throat at the same time, until the extremities of the medius are felt beneath the atlodian vault; one can then easily feel the ganglions. The supra-pharyngean ganglions cannot be well examined, but the hypertrophy of them leads often to respiratory trouble. The external ganglions of the trunk are very rarely the seat of tuberculous indurations, but nevertheless they ought not to be neglected, for the disease can show itself there. The prescapular ganglion, from seven to ten centimetres long, situated at the bottom of the prescapular groove (channel), and separated from the skin by the mastoideo-humeral, is easily displaced and felt by the four fingers when they are thrust beneath the point of the shoulder. The axillary ganglions, three on each side, having the size of a kidney bean, are situated in the middle of the vein (veine) or avant-cœur (front heart) under the deep pectoral muscle. When they are affected with hypertrophy they can be felt in the middle of the chest. The prepectoral ganglions, which are so often affected, are unhappily not accessible to the touch. The precervical ganglion is a lymphatic cord, eight to ten centimetres in length, placed a little above the stifle-joint, and parallel to the anterior edge of the fascia lata, from which it is separated by three to

four centimetres. The hollow of the flanks contains also three little ganglions which can be reached by way of the neoplasian processes and which have then the aspect of a dented ball. The mammary ganglions, which are very large, can be felt by seizing between the thumb and the other four fingers the two suspensory ligaments of the posterior quarters of the udder on a level with the entrance of the ischion. The sub-lumbar ganglions even can be examined, in case of necessity, through the rectum.—*Recueil de Médecine Vétérinaire*, 15 Sept., 1895. In the *Annales de Méd. Vét.*, Jan. and Feb., 1896.

MELANOSIS OF THE SUBGLOSSIAN GANGLIONS RESEMBLING A GLAND IN GLANDERS. By M. Bissange. A reddish-sorrel draught gelding, about twelve years old, was placed under the care of the writer as not having eaten for several days and coughing very frequently. The animal was in poor condition: his coat was rough, his nostrils red, and he had abundant exudation of a bad nature, purulent, sticky, and of a greenish-yellow color. In the mouth, on the left side, there was a hard indurated gland about as large as a walnut, which was not at all sensitive. It was situated high up, and adhered to the base of the tongue and to the skin. The throat was sensitive, and pinching the larynx caused violent coughing. The pulse was 75, and the respiration agitated and difficult. There was no chancre in the nose. These symptoms led to a diagnosis of serious angina, with the possibility of glanders. During the days which followed, his condition improved, the exudation became clearer, of a more healthy nature, and less abundant. He regained his appetite, but, as the gland did not change, M. Bissange advised the employment of mallein. The owner objected, and he then decided to remove the gland by an operation. The examination of the tumor after it was removed showed that it was merely a tumor of melanotic (mélanique) nature; after the removal of which the horse recovered in a short time. Melanosis of the subglossian ganglions in a sorrel horse, and with the absence of melanotic tumors at the anus, on the genital organs, at the base of the tail, in the parotid region, at the angle of the eye, at the base of the ears, constitutes a very rare clinical fact, which is of a kind to put practitioners on their guard in similar causes which might have serious consequences.—*Ibid.*, October 15, 1895; *Annales de Vét. Méd.*, January and February, 1896.

On to Buffalo!

REPORTS OF CASES.,

EXCISION OF A MAMMARY GLAND.

BY W. J. MARTIN, V.S.,
KANAKAKEE, ILL.

THE patient, a black coach-mare, was found to be suffering from a carcinoma of the right mammary gland. As she had never had a colt the owner was unable to account for the appearance of the malady. The fistulous tracts had been incised some time previously by a surgeon, but no benefit had been derived from it. I advised excision, to which the owner readily consented. The mare being cast, chloroform was administered. The mare was then rolled upon her back, and held in this position by two assistants and sacks of straw. The glands were now thoroughly washed with a warm solution of bichloride of mercury, 1 to 1000. An elliptic incision was now made along each side of the diseased gland, and carried down to the base of the same. The whole of the diseased tumor was now removed *en masse* by first gently lifting the tumor upward and separating the adherent tissue from beneath with the finger and handle of the scalpel. After removal of the tumor the blood-vessels were ligated as met with. The cavity was now sponged out with the warm bichloride solution, then dusted with iodoform, and the edges brought together by interrupted sutures of chromicized catgut. The mare was now permitted to rise, when a roll of absorbent cotton was placed over the wound and held in place by a broad bandage around the body. The mare was now placed in a stall from which all straw and dust had been removed, and her head tied up to prevent her from lying down, and ordered to be fed with bran and hay for a few days. On the third day the bandage was removed, the wound dusted with iodoform as before, and the bandage reapplied. From this time the mare was exercised and permitted to lie down. She made a rapid recovery, and after a lapse of one year shows no sign of a return of the disease.

DR. L. R. WEBBER, of Rochester, N. Y., reports a case of intussusception in a gelding. When first noticed the animal was

perspiring freely; abdomen distended with gas; would lie down, but did not try to roll. Looking upon the case as one of acute indigestion, it was treated as such with temporary relief for some ten hours, when all the symptoms of pain returned, with regurgitation of gas. All remedies at this time seemed powerless to give relief, though he lived forty-eight hours. Autopsy revealed the contents of stomach and small intestines fluid, the large intestines well filled with solid ingesta. The posterior three feet of the ileum was telescoped upon itself, and this part through the ileo-cæcal valve into the cæcum.

On to Buffalo!

TRANSLATIONS AND SUGGESTIONS.

BY G. LEO HAGENBURGER, M.S., D.V.S.,
BROOKLYN, N. Y.

VETERINARIAN KNOLL has proved that out of twenty tuberculous cows killed at the abattoir at Prenzlau all of them were affected at the mammæ. *Walkering* has proved that the refractometer for the examination of butter is not to be relied upon in all cases, especially where the milk is taken from cows largely fed upon cotton-seed flour or oil-meal. Sell calls attention to the oleogrameter (in his report to the Kaiserlichen Gesundheitsamt. of Prussia), the measurements showing various results of the same samples submitted for test under exactly the same conditions; clear butter shows less than oleomargarine; winter and summer butter also varied very largely. Brullé's method of using the nitrate of silver, test in order to ascertain if foreign oils have been added, is not what is claimed for it. Samples charged with vegetable oils have not reacted as indicated by the French scientist.

Veterinarian Pilarios, of Athens, Greece, shows in his statistics of three years 80 per cent. of cures effected with the repeated injection of mallein at intervals of eight to ten days. All animals so treated and recovered showed a rise of temperature after injection and had all the characteristic symptoms of glanders on clinical examinations beyond a doubt.

Why not isolate such patients in America, if valuable enough for treatment, especially when there is no indemnity now for the owner of such animals so affected?

Three deaths are reported in the district of Braunsberg, Halluponen, and Berlin, of grooms that were in attendance of glandered horses. All three succumbed to the malady.

A national law should be passed in America to prohibit the skinning of animals that are destroyed suffering from glanders, as the skin is not of sufficient value to endanger the lives of men working in rendering establishments where such cadavers are taken.

One hundred and nine deaths are reported in persons from anthrax or milzbrand; forty-three were butchers, four shepherds, six working at skinning of animals, the wife of one of the former, one groom, one hotelkeeper, two laborers on a farm, four hand-workers in a horsehair weaving establishment.

Meat-poisoning caused severe attacks of stomach and intestinal catarrh and the death of a four-year-old child last spring in Canton Thurgan, Switzerland.

The meat ingested by many people of Thurgan was pickled and smoked pork, and was prepared from pigs which had suffered from a reddened condition of the skin and slight intestinal catarrh before they were killed. People after eating the above meat were taken with intense intestinal pain, diarrhoea, and muscular twitchings all over the body; all except the infant recovered; the latter was physically a strong and healthy child until it consumed some of the meat. This report shows clearly again the fallacy accepted by so many that curing, smoking, and boiling of pork will destroy and render inert pathogenic bacteria and lessen the virulence of toxin in the alimentary canal.

The Military Hospital Record shows the causation and transmission of typhoid fever (in the barracks of Schettstadt classes) by a milk hand who was employed in milking cows and bringing it to the station, whose son was suffering from the above disease. Strange that none of the civilian population in that city contracted the disease, which was prevented by cooking the milk properly before using it, which was not done by the men in the barracks.

A new test to detect a certain potassium and potassium bichromate compound which is used to adulterate and preserve milk gave very reliable results, and what is more desirable, under almost any climatic conditions and temperatures, namely, a yellowish-red color, if 1 c.cm. of the milk is mixed with 1 c.cm. of a 2 per cent. solution of nitrate of silver.

On to Buffalo!

CORRESPONDENCE.

TALE OF AN UNSOUND HORSE.

THE big brown trotting-horse, "Sheraldine," a bold looker and a fair actor when speeded, was not long since sold at auction in this horse-market (Chicago) for \$1650 as a heavy harness-horse, Mr. John Dupee being the buyer. Gen. Joseph T. Torrence, also of this city, was the runner up. The horse was sold as sound, and Mr. Dupee availed himself of the buyer's privilege of having his purchase examined for soundness before accepting him. Dr. Joseph Hughes, who was for a long time the *Gazette's* veterinarian, inspected the gelding for Mr. Dupee, and threw him back on the seller, whereupon there was a great row. Four distinguished "vets" in this city passed the horse as sound, and it is said that Gen. Torrence signified his willingness to accept him at his last bid—\$1600. But "Sheraldine" is not in Gen. Torrence's barn, neither does he keep company with Mr. Dupee's high-steppers; he remains in the sale-stable from which he was first offered. Dr. Hughes, canny Scot that he is and careful practitioner, found a well-marked case of scirrhus (indurated) cord, the result of recent bungling castration, and a clearly marked fistulous condition was present, with flow of pus. Such a condition is remedied only by a delicate and dangerous operation. Of course it is not observable on casual examination; indeed, it requires a search to find it, but nothing escapes the eye of Dr. Hughes.

So vigorous was the criticism of the little Scotchman by the dealers and their "vets" that Mr. Dupee's ire was roused. He secured the names of a number of America's most eminent veterinarians and obtained their opinions as to whether such a condition as existed in "Sheraldine" should be considered disqualifying unsoundness in a sale-ring. Armed with their affirmative replies indorsing Dr. Hughes's opinion in every particular, Mr. Dupee placed \$5000 in his inside pocket and journeyed to the yards to "take a fall" of about that size out of the dealer. But the wary salesman declined the wager. That Mr. Dupee

wanted the horse and wanted him badly his bid of \$1650 proves; and that his veterinarian advised him intelligently and accurately as to the soundness of the horse he believes has been thoroughly demonstrated. And this is the tale of an unsound horse.—*Breeders' Gazette*, May 13, 1896.

"QUERY."—WHAT WE WANT TO KNOW.

JUNE number of the JOURNAL, page 508.

How four prominent veterinarians failed in an examination for soundness to note the existence of scirrhus cord in the trotting-bred horse "Sheraldine," recently sold at auction at Chicago?

EDITOR JOURNAL OF COMPARATIVE MEDICINE, ETC.

UNDER the heading "What we Want to Know," page 508 of JOURNAL for June, how four prominent veterinarians failed to note the existence of scirrhus cord in the trotting-bred horse "Sheraldine," recently sold at auction at Chicago.

Permit me to inform the editors that the prominent veterinarians referred to in this case did not fail to note the existence of scirrhus cord, as the horse had been examined by Dr. Hughes for a purchaser and rejected by him on account of the existence of scirrhus cord. Could any conscientious veterinarian do other than report to buyer, on detecting the same conditions existing upon examination, that said animal was certainly unsound? The buyer declining to take possession of the horse, the seller or party conducting the auction being annoyed at the decision of Dr. Hughes, called in a prominent veterinarian to examine the horse, as he was not satisfied that Dr. Hughes should have proclaimed the horse unsound under the existing conditions. Imagine the smile on the face of the seller when the prominent veterinarians disagreed with Dr. Hughes and declared that the horse with the existing scirrhus cord was sound.

It is nevertheless true that prominent veterinarians can be found in Chicago and elsewhere who at times will differ in opinion regarding an unsound horse, but, this being a decision so contrary to common usage that it can be no surprise to your

readers when you come out so plainly in your columns and seek for information regarding the case referred to, considering that such an absurd opinion had been given that a horse with an existing scirrhus cord had been proclaimed sound by a prominent veterinarian of Chicago.

Instead of being so indefinite in your remarks regarding four prominent veterinarians of Chicago being unable to detect scirrhus cord in examination of a horse for soundness, I think it would be only justice to the veterinarians of Chicago for the editors of the JOURNAL to make known the names of those whose actions cast reflection upon the veterinarians of our city, and in the future it would be well for the editors to be more particular and not multiply 1 x 4, making us four times worse than we are.

Yours respectfully,

ROBERT G. WALKER, M.D.C.

CHICAGO, ILL., July 10, 1896.

EDITOR JOURNAL OF COMPARATIVE MEDICINE, ETC.

I BEG to take exception to an article published in the June number of the JOURNAL under the heading "What We Want to Know." The second paragraph sets forth the accusation that four prominent veterinarians of Chicago failed to discover scirrhus cord in an examination for soundness of the trotting-horse "Sheraldine." How such an article ever reached the JOURNAL is a mystery to those acquainted with the circumstances of this case, which, owing to the amount of money involved, caused no little discussion among the veterinarians and horsemen of this city. The facts are so different from the allegations of this short but spicy article, as the first veterinarian who examined "Sheraldine" after his sale discovered what he considered a scirrhus cord. Other veterinarians who were consulted later pronounced the lesion a natural sequence of recent castration, and their opinion has since proved to be correct. Did the writer wish to reflect upon the Chicago veterinarians as a whole, or only on those whose opinion proved so valuable to both the buyer and seller of this horse, or was the injury intended for the present owner of "Sheraldine?"

Very truly yours,

L. A. MERRILLAT.

CHICAGO, ILL., June 29, 1896.

On to Buffalo!

EDITORIAL.

BUFFALO.

OUR contemporary, the *Review*, in its July issue, exhibited great concern over the prospects of a poor programme at Buffalo. But there are very good reasons for its lack of information as to United States Association affairs. The senior editor's active direction of the *Review* for many years kept him in close touch with the Association and all its affairs. The junior editor has long been counted among the members of the Association, but his face is rarely seen at the meetings. His new duties have burdened his shoulders with new responsibilities, and we have no doubt he now feels that closer touch with Association work is essential to editorial management, and we shall have his counsel and assistance in many ways. The programme for Buffalo is loaded down with good things, and there are attractions for all. The time-limit will have to be enforced, and the five-minute rule in debate will be in order. The local arrangements are well in hand, and, under the direction of Chairman Hinkley, of the Committee of Arrangements of the U.S.V.M.A., there can be no failure to have everything in readiness for the reception of the members. The profession of Buffalo and vicinity are already organized and completing their plans, and the chief request of the officers of this body should be promptly complied with, and every veterinarian intending to be present should send the chairman of the committee word to that effect.

There should be no absentees among the Eastern members.

OUR ADDED YEARS.

WITH this number of the JOURNAL closes the second year since the resuscitation with the September issue of 1894. For the kindly support of the profession in maintenance, for the wealth of material contributed by our friends, for the kind words of encouragement and the warm words of praise received, the editorial management are deeply thankful and grateful to all. While new duties, broader plans, and many changes in the

business management and direction have from time to time compelled more rigid rules in regard to subscriptions, there has been but one purpose in view in so doing, viz., a general rule, applied to all, and to make the JOURNAL better and stronger in every department. Every dollar received, and much more besides, has been used in strengthening the JOURNAL, that it might thereby better fulfil its mission for the manifold interests of the profession. In the future, as in the past, our watchword will be to "Lead Veterinary Journalism in America." Faithful to the interests of the profession, zealous for its welfare, and earnest in the maintenance of a high ethical standard, the JOURNAL will be independent in all things, neutral in nothing. Believing that such a journal is a factor in the work of the veterinarian, we ask at the hands of the profession a stronger support in the future, that we may better discharge the exacting duties of editorial direction and management.

CORRECTION.

THE July number of the JOURNAL inadvertently credited the name of R. G. Rice, V.S., who had successfully passed the Pennsylvania State Board of Veterinary Medical Examiners, to the Ontario Veterinary College. Dr. Rice was graduated from the class of '96, New York College of Veterinary Surgeons.

SIGNIFICANT PROGRESS.

LESS than four years ago the U.S.V.M. Association began the agitation for longer courses of instruction in the veterinary colleges of North America. Much was to be said for and against the movement, but the solution of creating a higher standard for its requirements for membership proved a happy and sure settlement of the Association's responsibility.

This step was not taken without some fear and misgivings; but those who so earnestly supported and advocated the movement pledged their faith and belief in its wisdom, and to-day none will gainsay the wisdom of the step.

Many were the predictions and forebodings of the position

the schools would take in this matter. Others feared the disintegration of the Association or the creation of another national organization based upon less restrictive requirements for its members. Happily for all concerned, these predictions have not come to pass, and every interest—professional, collegiate, and association—has been conserved and promoted by the courageous position then taken by the U.S.V.M.A.

On the eve of the thirty-third annual gathering it comes before the people of our country stronger, better, and more potent in every channel that has the true interests of the profession at heart. Honored and respected by every college in North America; sustained and aided by every State and local organization throughout the length and breadth of our land; trusted and admired by every member upon whom its privilege of membership has been conferred, well may it convene at Buffalo and take new joy and fresh courage in the work so well performed.

WHAT WILL OUR ANSWER BE?

FRANCE, in April last, notified this country that it would not permit imports of cattle to that country without subjecting them to the tuberculin-test. That government has also provided for the sanitary inspection of all cattle owned and kept in France. The action of France, Germany, and Italy, in adopting measures to protect their flocks from tuberculosis, will no doubt be followed by Great Britain and other countries. Should the latter nation take similar steps, it will mean an additional restriction upon the exportation of cattle from this country, and few of our States, particularly our great western reserve, are in position to defend themselves from this restriction. True it is that those sections of our country are literally free from tuberculosis among the cattle, but this will scarcely give them protection from such proposed measures. Those who have looked upon the means adopted in Massachusetts, Maine, New York, Connecticut, and other States as oppressive and too radical, will soon realize that they must follow the same course. We do not want other countries to send us more tuberculosis than we have, and they are perfectly justified in not wishing any greater amount to deal with than they have at home. We have no disposition to question the wisdom of these measures in other countries, and America must meet them by unquestioned evidence that we are sending

them cattle free from tuberculosis, just as we can assure them of our freedom from contagious pleuro-pneumonia.

OUR COLLEGES.

THE opening sessions of our veterinary schools for 1896 will mark an important epoch in the history of veterinary education in America, and those who for the first time step forward on a broader basis and more advanced curriculum deserve well the support of every veterinarian throughout the land. The earnest commendation and encouragement of the United States Veterinary Association should be theirs, and the strong arm of all local organizations should be placed about them in support of their efforts. The leaders in this movement have never looked backward after the first step, and their faith and courage have now brought new recruits to the ranks, and they should add strength and position to all. These changes, be it remembered, have taken place at a time when, from a financial point of view, they will be severely felt, for retrenchment in every line of industry throughout our land has prevailed for over two years, and the schools and colleges of every profession and vocation have felt keenly the results thereof. This then is the hour for the profession to lend in every way their aid and assistance, their good-will and support, their recognition and kind word of encouragement, that the added strength may in part compensate for the sacrifices made, and that we may hope to win over the few remaining institutions that should be within the fold.

As we close the last forms prior to going to press we are favored with the glad news that the National Veterinary College will hereafter be the Veterinary Department of the Columbian University. It will enjoy all the laboratory facilities and the aid of such of the corps of instructors as may be needed. This is a grand step and will aid this school in becoming one of the foremost in the country. Entering for the first time on her obligatory course of three years, she will now be afforded means and power to better demonstrate the worth of the teachers already associated with this school, and thus give to the profession well-equipped men as her graduates.

Surely the signs of the times are auspicious.

On to Buffalo!

NECROLOGY.

PROFESSOR JAMES HAMILL.

The veterinary profession and the horse have lost one of their best and greatest friends in the death of this noble and true man.

Dr. Hamill died of cerebral apoplexy in court on May 29, 1896, while acting as an expert witness in a horse case. He was called to the stand to be examined, and was partly through with his testimony when he suddenly fell from his chair and expired in a few minutes.

Dr. Hamill was fifty-five years old, was born in Bellicastle, County Antrim, Ireland, of Scotch parents, and came to this country while a very young man. He was a born horseman, a trait which he inherited from his father, who was also a skilled horseman and an experienced shoemsmith. He graduated from the Columbia and the New York Colleges of Veterinary Surgeons, and taught for many years in the above colleges. His lectures were spontaneous—never used notes; had a splendid flexible voice; was an orator, but never boisterous. Every student that had the good fortune to hear him benefited by his beautiful delivery and truthful advice. He was an expert on the horse's foot, an excellent practitioner, and a very good surgeon. His knowledge of the anatomy, physiology, and pathology of the horse's foot was marvellous; he was an advanced thinker and highly educated. If his good deeds were placed in print, this JOURNAL would not hold them. There was no limit to his good-will to his fellow-man; he was faithful, kind, and sympathetic; his left hand never knew what his right hand did; he perhaps did as much to advance and improve the veterinary profession as any man; he was always ready to assist a friend; it was no trouble for him to go one mile or a hundred if he could only do some good deed. There are thousands who bear witness to this. His friends were numerous; his enemies few, if any.

Dr. Hamill is mourned by a host of professional and non-professional friends throughout this country and Europe. His knowledge and honest endeavor can be seen in Manger's beautiful work on the horse, of which a large portion came from his pen, and in the new standard dictionary everything pertaining

to the horse also came from his pen. Dr. Hamill seemed too modest to write a book, so his great skill and extensive knowledge of the horse and his foot is therefore lost.

Dr. Hamill was an expert shoemsmith. Years ago his practice became so large that he gave up shoeing and devoted his whole attention to the practice of veterinary medicine. Dr. Hamill was an equine specialist, pure and simple; he would not treat any other animal. There was no reason for him not becoming a general practitioner except that he argued that each and every medical man should be a specialist, as no man could do himself justice in general practice.

Dr. Hamill's religion was a power in itself; he was humiliated to all mankind and a martyr to his friends. I am safe in saying that with his vast knowledge this great and peculiar character was rarely understood.

He leaves a widow and five children to mourn his loss. The interment took place in the family plot at Greenwood, among his loved ones and friends.

J. H. GARDNER, D.V.S.

DAVID ROBERGE.

David Roberge died on Thursday, July 9th, at his late residence, Van Sicklen Station, Coney Island, N. Y., in the seventy-second year of his age. He was born in Montreal, Canada, his father being a conservative farmer. He was married, in 1850, to Miss Sarah E. Stowe, a lady of much culture and education. They reared a family of eleven children, nine of whom are still living. During his youth and early manhood he took great delight in the study of the horse. His mind being of a mechanical turn, he conceived the idea of treating lame horses mechanically instead of medicinally, and carried this idea to such a degree of perfection that he was not only in the first line, but vastly in advance of all men, in his chosen profession. Retiring in disposition, he cultivated the friendship of few, but among them may be mentioned Robert Bonner, whose friendship for him increased yearly, as was shown by their constant association for some twenty-seven years in the study of the horse's foot. Fertile in ideas, strong in argument, and persistent in effort, he overcame every obstacle in his way, and at last gained the top of the ladder in his line. He learned the English language by the aid of his wife after they came to New York, although in conversation he always retained the accent

learned in the French college from which he was graduated. He was the author of *The Foot of the Horse*, a book dedicated to Robert Bonner, in which he crowded the results of his experiments during his life, and which will go down to posterity as the greatest benefactor of the equine race. Mr. Roberge was very fond of road-driving, and could daily be seen on the road in the times of Commodore Vanderbilt, William H. Vanderbilt, Capt. Jacob Vanderbilt, Messrs. Turnbull, Forster, Dewey, and others who took so much pleasure riding behind their famous roadsters. His skill at driving was second only to his skill in shoeing horses. Two years ago he was called to the Chair of Foot Pathology in the New York College of Veterinary Surgeons, and only relinquished his labors at teaching on account of ill-health. His many devices for correcting an unbalanced foot—to which cause he attributed all lameness common to the horse—were patented in this and other countries, and entirely abolished the use of blisters, firing-irons, and setons in the treatment of lame horses. His death is mourned by all true lovers of the horse, who unitedly and sadly bow to bedeck his memory with a wreath of forget-me-nots. At his funeral Robert Bonner, Mr. Busby, of the *Turf, Field, and Farm*, Mr. Farmer, and Dr. J. H. Ferster were honorary pall-bearers.

J. H. FERSTER, V. S.

The many friends of Dr. Thomas B. Rayner, of Chestnut Hill, Philadelphia, will deeply sympathize with him in the loss of his younger son, Moncure R. Rayner, from acute tuberculosis on the morning of July 6th. This son, the promised successor of his father, whose education was already in progress to fit him for the veterinary profession, had spent one year in the Biological Department and two years in the Veterinary Department of the University of Pennsylvania, where he had attained a high rank as an interested and devoted student, and gave great promise to be a worthy successor of his father. Just attaining the age of manhood, and filled with the energy and ambition of youth, with a great future before him, it seemed doubly hard for him to yield to the ravages of that ever-deceitful malady. It was a sad blow to the parents, and one which every acquaintance of the family will share with them.

Dr. W. E. Smith, of Sedalia, Mo., graduate of the American Veterinary College, Class of '91, died recently of diabetes.

On to Buffalo!

REVIEWS.

THE well-known house of W. R. Jenkins, 853 Sixth Avenue, New York City, which for so many years has taken the lead in the publication of veterinary works, and which in so doing has contributed so much to the true growth of the veterinary profession, has again favored us by presenting the recent translation by Prof. A. Liautard of C. Pellerin's contribution relative to the value of *Median Neurotomy in the Treatment of Chronic Tendinitis and Periostitis of the Fetlock*. The translation bears with it the experience and ripe judgment of Prof. Liautard, whose rank as a surgeon is not surpassed in our country. The work will be gratefully received by those veterinarians who for many years have relied upon counter-irritation and the actual cautery for dealing with these lesions, and who have had so many grievous disappointments in this line of treatment. The operation has already found favor in this country, the July number of the JOURNAL recording a series of favorable results by one operator. Dr. Pellerin was formerly connected with the Alfort Veterinary School.

Another valuable work to the busy practitioner and student has been issued by the same house. It is entitled *Outlines of Veterinary Anatomy*. Part I. covers the anterior and posterior limbs, by Prof. O. Charnock Bradley, of the New Veterinary College, Edinburgh, Scotland. Illustrated by many diagrams, the text is thus made clearer to the student and the subject more readily and quickly grasped. To the practitioner about to enter the operating arena it will promptly afford information upon which he may be a little uncertain, and will quickly mirror the field of his operation before him. Typographically it is a very attractive product of the printer's art.

Mr. Jenkins has also issued, for the use of lecturers, demonstrators, and others specially engaged in teaching, a series of diagrams of the horse, the work of Prof. Sussdorf, M.D., and translated into English by Prof. W. Owen Williams, of the New Veterinary College, Edinburgh, Scotland. These diagrams are shortly to be followed by similar ones of the cow.

Surely with these many valuable aids the future student, and later the veterinarian, must become in every way better equipped for his work and more thoroughly fitted to pursue his vocation. With increased facilities and increased time to take advantage of the same, the future graduate must be of much more worth to his community, and be better prepared in every way than was his predecessor to promptly deal with the perplexing questions and demands of his profession.

Gould's Students' Medical Dictionary. Tenth edition. Messrs. P. Blakiston, Son & Co., 1012 Walnut Street, Philadelphia. This book, typical of the printer's highest art and up to date in its contents, will be of special interest at this time to prospective veterinary and medical students. Intending matriculants who purpose doing some preparatory reading will find it of the greatest value to them, and the busy student at college should have it continually at his right hand. Replete with information, valuable tables and lists, it will continue to find in the future, as other editions have in the past, a wide sale and very appreciative readers to daily consult its pages.

Veterinarian A. C. Haasloch, Lecturer on *Materia Medica* and Therapeutics at the New York College of Veterinary Surgeons, has brought forth, through the well-known publishing house of W. R. Jenkins, a *Veterinary Compend of Materia Medica and Therapeutics*. The little volume is neat and convenient in size and form, and printed in clear, bold type. It briefly covers the whole subject of *materia medica*, going into no detail of the matter presented. It will prove a valuable reference-book to the student, and aid him in his studies and preparation for examination; alike it will find a place on the office table or pharmacy shelf of the busy veterinarian, where its prompt aid will suffice for a time the busy worker when one is in doubt. The arrangement of the various drugs under the chief action they possess makes it more attractive and presentable. The veterinarian has lacked in his field many of these assistants, and so has the student at the end of his college term when reviewing for examinations, and they will find in this work a help in time of need.

On to Buffalo!

CONTROL WORK.

New York. The *New York Times* in commenting editorially upon the fact that only the cattle of New York county would be examined with tuberculin, while the city's milk-supply came almost wholly from outside, owing to the parsimony of the State legislature, says the work of inspection throughout the State has been suspended in the face of the unanimous recommendations of the State and many local boards of health and a general demand from the public that they be given greater security from the dangers of this source of their food-supply. It highly commends the work done in Massachusetts, and refers to the other States of Connecticut, New Jersey, and Pennsylvania, which are doing like work. Further, that the time is coming when all the dairy-herds in the New England and Middle States will be subjected to the tuberculin-test, for the protection of consumers of dairy-products as well as for the benefit of the owners of cattle. We expressed this opinion some years ago, and it has been confirmed by what has taken place since that time. If State legislatures refuse to provide for the work, the cities will require it to be done throughout their suburban "milk-districts" for the protection of their inhabitants. This State might have been foremost in the movement, but now it lags behind all its neighbors.

Pennsylvania. Through the daily press, rabies among the dogs and horses of Altoona, Pa., has been reported.

This disease continues to prevail also in a circumscribed district in Philadelphia. Fears are entertained at Cloverdell Farm, near Philadelphia, the home of so many of the most famous sires and brood-mares, as well as valuable kennels of collies and St. Bernards, as to the outcome of a suspected case of rabies in one of their own dogs, and which fled from section to section of this great breeding establishment before he was destroyed. Dr. E. Mayhew Michener, of North Wales, Pa., is making a thorough investigation of the matter.

Dr. E. Mayhew Michener, of North Wales, has destroyed, under the direction of the State Veterinary Sanitary Board, one hundred head of cattle in the eastern section of Pennsylvania, adjacent to Philadelphia. He estimates that 5 to 6 per cent. of the cattle in Montgomery, Bucks, Chester, and Delaware counties are affected with tuberculosis.

Another herd at Doylestown has had eight out of nine Guernseys condemned and destroyed.

The eight cattle condemned and quarantined at Atherton, Westmoreland County, are reported as improved in general appearance.

A herd near North Wales, numbering seventeen, mostly Jerseys, revealed thirteen tuberculous ones.

On July 16th a number were destroyed at Columbia.

Scranton and Columbia have solicited the aid of the Pennsylvania State Veterinary Sanitary Board to test the cattle furnishing their milk-supply.

Secretary Edge will ask for one hundred thousand dollars at the next session of the Pennsylvania Legislature, to more thoroughly press the work of eradicating contagious and infectious diseases from the State. Some definite ideas are now being gained as to the prevalence of tuberculosis by the present work of the Board.

State Veterinarian Pearson has been investigating quite an outbreak of rabies in Centre and Union counties.

Louisiana. Charbon has broken out in enzoötic form among the mules of northern Louisiana. Pasteur vaccine is being extensively employed to control its spread.

Maine. The cattle commissioners of Maine are busy as they can be, with several weeks' work ahead, testing herds of cows reported as tuberculous or on the complaint of local boards of health; much interest and astonishment prevail among the cattle-owners at the tuberculin-test and its accuracy in detecting the diseased ones.

Saco has requested the State Cattle Commissioners to examine the herds supplying that city with milk.

Massachusetts. At Webster the herd of eleven kept at the poor-farms were tested in July, and nine were found diseased and destroyed. No other animals will be placed on the farm until after they are tested.

Sudbury farmers can hardly realize that their animals, so well apparently, could be the victims of tuberculosis, though the tuberculin-test revealed it and post-mortem confirmed the accuracy of the test.

Michigan. Professor E. A. A. Grange has discovered tuberculosis among the State College herd.

Illinois. Forty of the herd of cows at the Kankakee Asylum were recently ordered destroyed on account of being tuberculous by Veterinary Trumbower

Kansas. Texas fever, introduced through cattle from Indian Territory, has broken out to a certain extent near Independence. National and local officials are directing its control.

Missouri. St. Louis is receiving her primary lessons in dealing with tuberculosis among her dairy cattle, and the newspapers are teeming with criticisms of all shades and colors. The reliability of tuberculin as a diagnostic agent is raised with as much force as if it was so new a medium as to need further tests. A little longer, and they will realize that this whole work has been done long ago and its value settled as being beyond question the keenest and most reliable method known.

The new ordinance of St. Louis places all dairies in the city under its provisions; that the sanitary officers of the Health Department shall inspect all stables, barns, buildings, sheds, lots, and pastures where cows are kept or fed, the products of which are sold in the city; the daily cleaning of all milk depots and dairies, all cow stables, the weekly cleaning of all lots, and no draining of these places to any stream or water-course; proper facilities for cooling milk; it also makes provision for drainage of all future cow stables, and permits to erect the same must be obtained by municipal ordinance. An application to erect such building must be filed, stating location, name of applicant, number of cows to be provided for, size and dimensions of stable, the same of lot or field, whether same is contiguous to a city sewer, or by what method manure and refuse are to be removed, as to city water connections, and method of washing out stable. The dimensions of stalls, height of ceiling, character of floors, drains, ventilation and location, as to doors in connection with building line, are provided for. Alterations and rebuilding of old stables are provided for in the new requirements for light, ventilation, and drainage. Stables not complying with these requirements may be declared nuisances by the Board of Health, and the owners cited before the courts to answer therefor. Suitable fines and punishment are provided for the several violations enumerated.

The appointment of two practical veterinary surgeons as inspectors is provided for; salary \$175 per month, and they

shall provide themselves with horse and carriage; said veterinarians to give bond of \$5000 for faithful performance of duty; bondsmen to be in no way connected with milk or dairy business. They shall have ingress and egress to all properties involved in the milk business, to examine into the physical condition of all milch cows. Penalties for interference with said inspectors, concealment of diseased animals, etc., are provided for. Duplicate reports of diseased ones are to be filed. Their condemnation and destruction are provided for. Suitable fines are provided for officers of the city failing to perform their duty; provision for quarantining dairies wherever smallpox, diphtheria, scarlet or typhoid fever may exist, prohibiting sale of milk, and requiring fumigation, etc., of premises before quarantine can be raised.

St. Louis is much agitated over the inspection of the cattle furnishing the milk supply of the city, and all sorts of rumors are floating about. The herd at the city's poor farm, largely Holstein in breed, exhibited twenty-two out of twenty-eight with tuberculosis under the tuberculin test. State Veterinarian White and Dr. Ellis, City Inspector, are giving the matter almost their entire attention. The lack of a compensating clause to the owners for animals condemned and destroyed is creating much opposition. Deaths among children from tuberculosis and intestinal troubles have been very numerous throughout the city, and the milk supply is charged with a great deal of responsibility therefor. The State and City Boards of Health are working together in this movement and are very determined.

National. Secretary Morton has declined to raise the quarantine regulations against cattle from France, Switzerland, and Belgium.

The presence of foot and mouth, as well as other diseases, demands protection for our cattle-owners, and now that we have been free from contagious pleuro-pneumonia for three years or more, we should not risk again implanting it upon our soil.

Great Britain. Through the passage of the "Diseases of Animals" act, the regulation in force for several years becomes permanent, that from January 1st, 1897, all animals from foreign countries will have to be slaughtered at the point of landing. Animals imported for breeding or other special purposes will be subjected to quarantine regulations.

AMONG THE COLLEGES.

THE establishment of a department of comparative pathology at Harvard University, the endowment of a professorship in the work, and the selection of so well-equipped a man as Professor Theobald Smith means much to the future veterinary students of Harvard, and will afford them knowledge of a high and invaluable character.

I. D. RAWLINGS, M.S., M.D., Professor of Bacteriology at the Northwestern University Medical School, has accepted the Chair of Bacteriology at the McKillip Veterinary College.

THREE American Veterinary College graduates are enrolled in the corps of instructors of the Kansas City Veterinary College, namely, Drs. R. H. Harrison, F. W. Hopkins, and T. J. Turner.

HARVARD COLLEGE VETERINARY DEPARTMENT. On June 24th, at Sanders' Theatre, Boston, Mass., the commencement exercises were held. The trustees, faculties, and graduates were escorted from the college to the theatre by the National Lancers, headed by the Lieutenant-Governor.

President Eliot made a new departure in announcing and conferring the degrees in English instead of Latin as heretofore, which added much pleasure to the large audience in attendance. The following students received the degree of M.D.V.: James Munroe Armstrong, Henry Ernest Brown, Ernest Page Fuller, Fred Bryant Gage, Daniel Schafer Hays, Henry Nounse Hill, George Steven Lindenkohl, Calvert Howard Playdon, John Aloysius O'Connell, Daniel Patrick Keogh, George Edgar Fetter, George Francis Quinlan, and James Marshall.

At the commencement dinner over two thousand graduates participated and many felicitous after-dinner speeches were listened to. President Eliot announced a very important step to be adopted in the medical department after 1900, when no person will be admitted to the medical school unless he already possessed a degree in arts, letters, or science.

THE NEW YORK STATE VETERINARY COLLEGE, at Cornell University, has issued its opening announcement; at the head of the faculty we find Prof. James Law, F.R.C.V.S., who will occupy the Chair of Principles and Practice of Veterinary Medicine, Veterinary Sanitary Science, and Veterinary Therapeutics; P. Augustine Fish, B.S., B.Sc., D.V.S., as Assistant Professor of Veterinary Physiology, Materia Medica, and Pharmacy; Veranus A. Moore, B.S., M.D., Professor of Veterinary Pathology and Bacteriology, and of Meat Inspection. Among the other members of the faculty and instructors there are no veterinarians; none are very well known to the profession, though all of them have contributed to the high standing of Cornell University in her various departments. Prof. Law, as an instructor and director of such an institution, needs no comment from us, his long years of useful work on behalf of the profession are too well known to all. Prof. Fish has but recently gained his veterinary degree, though he has been

well known as an able instructor in other directions. Prof. Moore who now stands at the head of the investigation work of the Bureau of Animal Industry, and who succeeded Prof. Theobald Smith, and who has contributed a great deal to the advanced knowledge of many of the infectious and contagious diseases of the live stock of our country.

The Chair of the Principles of Veterinary Surgery, Zoötechny, Obstetrics, and Jurisprudence is not yet filled, though we are reliably informed that the institution is looking out after one of several very capable men in our country to fill this chair. As with other schools, it starts out with the three-years' course of nine months each, with early decision to advance this in conformity with the other departments of Cornell to four years of nine months each.

The teachings will be of the broadest and most liberal kind, and the new buildings already erected with the facilities they offer, associated with privileges in many of the departments of Cornell, insure a thorough and complete veterinary course. We could have but one additional wish to express in the matter: that she may soon associate with her more veterinarians of the country who are quite well fitted to fill such a position, if sufficient inducements could be offered to them.

As we are partly in press this gratifying news reaches us of the appointment of Prof. W. L. Williams, of Bozeman, Montana, to the vacant chair in the faculty. This is a worthy appointment and the recognition of one who well merits the same. Dr. Williams is peculiarly well equipped and a good all-around man, an earnest student, a thorough worker in all that he does, and one who has won a high place in the esteem of all who know him personally. His writings, well known to the profession at home and abroad, have been such as to command attention and well-deserved comment on all sides. The college strengthens itself by this selection, and the work of its instruction is measurably increased thereby.

THE UNITED STATES VETERINARY COLLEGE announcement for the session of '96 and '97 announces its return to the three-year schools of six months each. Dr. C. H. Ford, Professor of Dental Surgery, and one of the hospital surgeons as well as one of the trustees of the institution, has severed his connection therewith, and as hospital surgeon is succeeded by Andrew C. Seacord, graduate of the Class of '96, who will also fill the Chair of Dental Surgery and Demonstrator of Anatomy. Dr. J. H. Adamson has also severed his connection with the school as Professor of Anatomy, and this subject will be taught by the Dean, C. Barnwell Robinson, during the coming year. John B. Daish, who last year filled the Professorship of Botany and Zoölogy, is not associated with the school during the coming year. Dr. Alexander Dunn, who held the Chair of Materia Medica and Toxicology, has been succeeded by William A. Hedrick as instructor in materia medica, associated with his former course of chemistry.

Fifteen students were registered during the term of '95 and '96. The matriculation examination is the same as recommended by the Association of Faculties of North America.

THE AMERICAN VETERINARY COLLEGE, in its twenty-second annual announcement for the session of '96 and '97, retains its old faculty, to which has been added Professor Allen S. Heath, M.D., V.S., as Professor of Hy-

giene, Breeding, and Zoötechnics; Dr. Heath is well known to the veterinary profession and is a very well-informed man, and will contribute, we have no doubt, much valuable information to the students that may attend the college the coming session. Minor changes have been made in the hospital staff of graduates of the Class of '96; the session will open on September 30th and close with commencement exercises on March 25th. All matriculates at the school after January 1st will have to complete regents' examination or exhibit evidence of having collegiate education credentials to a certain point denominated in the announcement.

KANSAS CITY VETERINARY COLLEGE.—No announcement for the coming collegiate year promises so much for the future veterinary student in extended changes of curriculum as that of the Kansas City Veterinary College. No more gratifying news could be afforded the profession and its associations than this marked progress in behalf of higher veterinary education. The sincerity of purpose of those who have directed this school for the past three years has been of a character to establish confidence in the minds of all, and we need no better evidence of the intentions and purposes of those who will direct and control it in the future than the announcement just issued for the course of 1896-97.

Entering a new home, where greater room and better facilities for work greet them, and adopting a fixed course of instruction over a period of three years and six months each, they will surely find that they have not built in vain, for the strength and power of any school is not in the claim of a few shining lights among the profession, who represent the school as graduates, but rather in the uniform strength of all their offspring and the recognition and support they command as a whole because of their worth and merit.

The complete reorganization of the faculty has afforded an opportunity of assigning the work in a more complete manner and the readjusting of the course of instruction in thorough accord with the needs of the times.

Dr. Charles J. Sihler adds Anatomy to his other branch of Meat-inspection, while Clinical Surgery has been placed under the direction of Robert C. Moore, D.V.S., vice John Forbes, M.R.C.V.S., who will not be connected with the school this year.

The Control and Eradication of Contagious Diseases has been placed under the direction of Dr. T. J. Turner, late State Veterinarian of Missouri, ex-Secretary of the United States Veterinary Medical Association, a graduate of the American Veterinary College, vice George C. Pritchard, V.S., resigned.

The subject of Principles and Practice of Medicine, Milk- and Dairy-inspection remain under Dr. SESCO Stewart, and the same may be said of *Materia Medica* and Therapeutics, which will be taught by Dr. S. L. Hunter.

Dr. Silas L. Brooking will adhere to the teaching of Comparative Physiology, while the former branch of Anatomy connected with this chair goes to Frederick Hopkins, D.V.S., who has been added to the faculty, assisted by L. Enos Day, V.S., who succeeds John E. Topping, D.V.S., who held the position of Demonstrator of Anatomy in the session of 1895-96.

Thomas A. Bray, D.V.S., has been added to the teaching staff, and will instruct the students in Lameness and Shoeing and Physical Diagnosis. These branches were formerly taught by Dr. Junius H. Wattles, whose health compelled him to resign his connection with the school (whose course he largely moulded), and for a time seek a milder climate.

Benjamin F. Kaupp, D.V.S., succeeds John Airth, M.R.C.V.S., resigned, as instructor on Parasites and Parasitic Diseases.

R. H. Harrison, D.V.S., retains the subjects of Canine Pathology and Dental Surgery as his work. Likewise William C. Barth, V.S., that of Obstetrics.

Theodore Schaefer, M.D., succeeds Claude C. Hamilton, M.D., Ph. G., as Instructor in Chemistry, and Joseph S. Lichtenberg, M.D., succeeds Flavell B. Tiffany, M.D., on the subject of Ophthalmology. George Q. Smith will aid the Chair of Chemistry as demonstrator.

Hygiene has been added to the list of subjects taught, and will be directed by E. Von Mast, M.D.

U. B. McCurdy, D.V.S., succeeds John E. Topping, D.V.S., on Breeds and Breeding and Feeding of Animals.

Veterinary Jurisprudence has been added to the course and assigned to Frank M. Sheridan, Esq.

Isidore J. Wolf, M.D., will consider the subject of Bacteriology, succeeding Leo. A. Schaeffer, M.D., and Nathan McVey, M.D., resigned. His former subjects of Microscopy and Histology will be taught by Leon Rosenwald, M.D., under the heads of Histology and Pathology, assisted by Thomas C. Procter, M.D., as demonstrator.

O. G. Atherton, D.V.S., has been added to the faculty as Demonstrator of Materia Medica and Pharmacy.

The total corps of instructors number twenty-two, an increase of four over the preceding session; of this number fourteen are practising veterinarians while six are practising human physicians, one a member of the bar, and another giving his attention to laboratory work.

Beginning in January of each year a post-graduate course will be inaugurated, lasting eight weeks, covering specially the subjects of Meat-inspection, Dairy- and Milk-inspection.

The entrance examination established by the Association of Veterinary Faculties will be adhered to, in the absence of certificate or diploma from some other college, normal, or high school. One hundred dollars for tuition fee for each year has been established, covering all expenses, and a fee of fifty dollars for the post graduate course.

WHAT WE WANT TO KNOW.

How those people who are the promoters of horse-shows expect to improve the type and character of the horses in the sections of the country where they are held, when no proper consideration is given to the relative soundness of the animals exhibited? Without a skilled, a trained veterinarian to conduct this all-important feature, there can be little expected in this direction.

How so many veterinarians in New York and Kings Counties were allowed to register by affidavit?

SOCIETY PROCEEDINGS.

NOTICE TO THE MEMBERS OF THE U. S. V. M. A. •

THE local committee of arrangements for the Buffalo meeting, September 1st, 2d, and 3d next, are desirous that all members, delegates and other veterinarians who anticipate attending the convention will give notice of the same to H. D. Martin, V.S., Secretary Local Committee, 481 Rhode Island St., Buffalo, N. Y. Dr. Edward McLeod, President.

Dr. H. D. Gill will prepare a paper for the meeting at Buffalo on the "Relation of Veterinary Colleges and Veterinarians to Horseshoers."

The New York County Society will send delegates to the Buffalo meeting.

President Hoskins, of the U. S. V. M. A., has recently been accorded honorary membership in the New York County Veterinary Medical Association, and their honorary certificate of membership was conferred upon him.

President Ridge, of the Pennsylvania State Veterinary Medical Association, will be among the list of applicants for membership at Buffalo.

The mutual recognition of students by colleges belonging to the Association of Veterinary Faculties will be discussed by Prof. H. D. Gill at the meeting of the college faculties at Buffalo.

Major Edwin Jewett, of Buffalo, will welcome the visiting members and delegates to the "Queen City of the Lakes."

Owing to the prospects of an unusually large outpouring of the profession the sessions of the convention will be held in the lecture-room of the Buffalo University. This change from the Colonial parlor of the Genesee Hotel has been made because of the large accommodations afforded at the University.

Secretary Morton has kindly consented to give the largest latitude possible in the way of leaves of absence to those connected with the Bureau of Animal Industry consistent with the necessities of the service. An invitation has been extended Secretary Morton to be with us, and is now under consideration at his hands.

Dr. Merillat is out with an important letter of inquiry among the veterinarians, and everyone should afford him the information desired. His topic at Buffalo will provoke an interesting discussion, and there will be great variance of opinion on the subject.

There is one officer who will more than merit a reflection. Secretary Stewart has been assiduous in his work, and he will present a better state of affairs than has been our lot for three years. He should receive a unanimous recall to this place of so much importance.

Dr. Frank H. Miller, of Burlington, Vermont, now at Berlin, Germany, will present a paper at the coming meeting at Buffalo on "Diabetes Mellitus in Dogs."

President Hoskins has finally secured the consent of Ex-President Williams to prepare a paper for the Buffalo meeting. His subject, "Physiological Variations," is one of great interest, and the members will be assured of a rich treat in store, for the writer has been one of the best contributors in recent years to the Association's original work.

Chairman Harger, of the Committee on Diseases, is out with a letter of

inquiry among the members and profession which should merit a prompt reply from all those who receive it, whereby they may be mutually afforded a general knowledge of the prevalence of the several diseases enumerated among the live stock of our country. This is an important work and every effort should be made to make it as complete as possible.

• The Committee on Intelligence and Education will consider in their report the following leading points: The curriculum required in the different American schools; the curriculum required in other countries; the most conservative method of procedure to obtain a uniform standard of matriculation and curriculum for the American schools. An appeal to the advanced-standard schools to use great caution in the selection of their teaching-staffs.

State Secretaries should be zealously looking over their respective States with a view of drawing into the national organization the strongest and best members of the profession.

Dr. Hinebauch will continue his interesting reports on "Feeding Millet," a subject of much interest, importance, and with which he has had much experience and given deep and intelligent study.

Veterinarian A. T. Peters is doing valuable missionary work among the veterinarians connected with Agricultural Experiment Stations in the interest of our Buffalo meeting. The advisability of forming an organization of these veterinarians to hold meetings in connection with the annual gathering of the U. S. V. M. A. is being agitated.

Veterinarians attending either the Ohio or New York State meetings in conjunction with the national convention will have the advantage of the reduced railroad rates by attendance upon one day of the latter's sessions.

The Missouri Valley Veterinary Medical Association passed by a unanimous vote a resolution to invite the U. S. V. M. A. to hold the meeting for 1897 at Kansas City, and instructed its officers to secure the meeting if possible.

Dr. Joseph Hughes, of Chicago, will be among those from the Windy City to participate in the deliberations at Buffalo.

Secretary Stewart and Chairman Williams, of the Publication Committee, say it wholly lies with the members as to whether we have a compilation of our proceedings at Buffalo or not. Pay up your arrearages, fellow-members, and make sure this much-to-be-desired part of our history.

Who will be our next President?

Chicago will send many of her strongest devotees of the profession.

The leading cities of the country will be better represented at Buffalo than at any of our meetings for years. And why not?

Chairman Turner, of the Army Legislation Committee, is sanguine of successful legislation by the next Congress.

Dr. W. H. Dalrymple, of Baton Rouge, Louisiana, will read at Buffalo a paper entitled "Southern Veterinary Experience."

Dr. Jas. A. Waugh, of Pittsburg, Pa., will introduce the subject of "Toe-clip Injuries," with a paper and report of a number of cases.

The leading subjects for consideration at Buffalo will be assigned speakers who will lead the discussion of the same.

Much complaint and criticism may be heard around of illegitimate methods of obtaining practice among members of the Association. These charges can only be acted upon by those injured making them in writing,

and this should be done in the interest and for the honor of the Association and that justice may be meted out to all.

Chairman Harger reports a large number of replies received to his letter of inquiry bearing upon the prevalence and location of the contagious and infectious diseases prevailing in our country during the past year.

Among the leading topics under which the subject of tuberculosis will be considered are: First, should indemnity be paid for cattle that show clinical symptoms of tuberculosis? If not, how best may traffic in such animals be prevented? Second, if it is granted, as it seems that it must be, that tuberculosis is spread largely through the milk from tuberculous animals; but that it is not so spread by the use of the cooked flesh of such animals as food; if, therefore, it is desired to purify the milk-supply by removing all of the tuberculous animals from the herds supplying a district with milk, what shall be done with the tuberculous cattle so removed? If it is decided that their flesh may be safely used, cooked, as food, is there any governmental restriction that should be placed upon its preparation or sale? If so, should the flesh of all tuberculous animals be rendered or otherwise destroyed? If it is considered that a portion of this flesh is fit for food, can the Association lay down any practical rules at which the line between the safe and unsafe beef and veal may be clearly defined to butchers and inspectors, neither of whom are as a rule professional men? The necessity of systematic examination of cattle as it is being conducted in Massachusetts. The after-effects of tuberculin, or its influence on healthy cattle. The accuracy of tuberculin. The Danish system of controlling tuberculosis. The desirability of examining with tuberculin all animals that enter interstate trade. The virulence and dangers of tuberculous milk or milk from tuberculous cattle.

INSTRUCTIONS RELATIVE TO RAILROAD FARES.

1. The reduction is to persons going to the meeting from territory of the Trunk-Line Association, and we hope we can say from the Missouri River the Atlantic Ocean.

2. The reduction is fare and one-third on committee's certificate, conditioned on there being an attendance at the meeting of not less than one hundred persons who have travelled thereto on some legitimate form of railroad transportation.

3. The reduction applies to persons starting from trunk-line territory by any of the roads named below, who have paid 75 cents or upward for their going journey. Each person availing of it will pay full first-class fare going to the meeting and get a certificate filled in on one side by the agent of whom the ticket is purchased. Agents at all important stations and coupon-ticket offices are supplied with certificates.

4. *Certificates are not kept at all stations.* If, however, the ticket agent at a local station is not supplied with certificates and through tickets to the place of meeting, he can inform the delegate of the nearest important station where they can be obtained. In such a case the delegate should purchase a local ticket to such station and there take up his certificate and through ticket to place of meeting.

5. Going tickets, in connection with which certificates are issued for return, may be sold only within three days (Sunday excepted) prior to and

during the continuance of the meeting; except that when meetings are held at distant points to which the authorized limit is greater than three days, tickets may be sold before the meeting in accordance with the limits shown in regular tariffs.

6. Deposit the certificate with the Secretary or other proper officer of the organization at the meeting, for necessary indorsement and visé of special agent.

7. Certificates are not transferable, and return tickets secured upon certificates are not transferable.

8. On presentation of the certificate, duly filled in on both sides, within three days (Sunday excepted) after the adjournment of the meeting, the ticket agent at the place of meeting will return the holder to starting-point, by the route over which the going journey was made, at one-third the highest limited fare by such route. The return tickets will in all cases be closely limited to continuous passage to destination.

9. No refund fare will be made on account of any person failing to obtain a certificate.

SEMI-ANNUAL MEETING OF THE ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

Union Hotel, Galesburg, Ill., May 19, 1896. In the absence of both President and Vice-President (Dr. M. R. Trumbower, President, and Dr. J. L. Tyler, Vice-President), Prof. A. H. Baker, of Chicago, was elected President *pro tem.*, and responded by an appropriate address.

The following members responded to roll-call: Drs. Albert Babb, A. H. Baker, F. L. Brown, E. S. Fry, T. J. Gunning, W. C. Hanawalt, J. McClintock, W. G. Neilson, R. P. Steddom, and John Scott.

After the Secretary made his report, Prof. A. H. Baker read his production, "Puncturing for Gastric Flatulence." The discussion of this valuable paper closed, on motion. The article of Dr. T. B. Newby, of Pana, entitled "An Anomalous Disease of the Horse," was read by the Secretary, the writer being absent. After the discussion of this paper the Association adjourned for dinner.

The Society reconvened at 2 P.M., and listened to the essay of Dr. John Scott on "Diseases and Injuries of the Foot." A lengthy discussion of this wide subject was finally closed, on motion.

A general and very interesting discussion then took place on "Barium Chloride as a Therapeutic Agent;" "Tuberculosis;" "Parturient Apoplexy;" "Heat-exhaustion and Sunstroke in Horses;" "How to Fire for the Cure of Spavin;" and other meritorious topics.

On motion of Dr. Steddom, which was seconded by Dr. Gunning, Charles H. Herrick and Robert Gysel, both of the Chicago Veterinary College, class of '93, and R. C. Mylne, of the Montreal Veterinary College, class of '89, were elected to membership by acclamation.

The subject of State legislation was next taken up, and it was unanimously decided that the matter should be pushed to the front during the session of the coming legislature.

Adjourned to meet in Chicago in November.

ALBERT BABB, A.B., M.D.C.,
Secretary.

VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION.

THE third annual meeting was held at Norfolk, June 24, 1896, President Dr. W. H. Harbaugh in the chair, and Secretary Dr. George C. Faville at his post. The following members were present: Drs. Harbaugh, Faville, Gilchrist, Niles, Drake, Dixon, McCulloch, Bannister, Curtice, and Sweeny. Health-officers and laymen of Newport News and the city were also present. Drs. F. S. Roop, Blacksburg; E. E. Bowen, Lynchburg; John Rome, Colonial Beach; and A. J. Burkholder, Staunton, were elected to membership.

After listening to the retiring president's address and transacting routine business, the following officers were unanimously elected for the ensuing year: Dr. George C. Faville, Norfolk, President; Dr. W. T. Gilchrist, Norfolk, First Vice-President; Dr. Charles McCulloch, Howardsville, Second Vice-President; Dr. Thomas M. Sweeny, Richmond, Secretary; and Dr. A. J. Burkholder, Staunton, Treasurer.

The Association then took a recess and enjoyed the hospitality of Dr. George C. Faville at his elegant home at Atlantic City. Later they were driven to Lambert's Point piers to witness the inspection, tagging, etc., of export cattle, previous to their embarkation for England, after which the members returned to Norfolk.

The Association reconvened at 4.45 P.M. During the afternoon session the following papers were read: Dr. H. S. Drake, "Navicular Disease;" Dr. Cooper Curtice, "Eradication of the Cattle Tick." Dr. W. H. Harbaugh also read an interesting paper, the title of which was "Report of a Subnormal Temperature." All the papers were fully discussed.

The veterinarians of the State are actively engaged in a brisk fight against bovine tuberculosis. The disease was fully discussed, after which the following resolutions were passed: "We, the Virginia State Veterinary Medical Association, fully indorse the work being done in this State in regard to the prevention of products of tuberculous animals being sold as human food; and we desire to inform the public that the tuberculin-test is the only reliable means of diagnosing tuberculosis in cattle; and we further assure the public that when tuberculin is properly used it has positively no deleterious effect on healthy cows or their milk. We further declare that milk or meat from tuberculous animals is impure and unfit for human food, no matter to what extent the animal may be affected. It is the opinion of this Association that the National Government should adopt radical methods to exterminate this disease and prevent any more of it being introduced from abroad by the importation of thoroughbred or other stock, and, in the meantime we strongly urge our State authorities to quarantine against other States, and allow no cattle to be shipped into this State for breeding or dairy purposes unless accompanied by a clean bill of health, based on the tuberculin-test, or to have them tested by a veterinarian satisfactory to the board of control at point of entry at owner's expense."

The next subject brought before the Association was the Antivivisection Bill, which was introduced in the last Congress. After the subject had been fully discussed the following resolutions were adopted: "*Whereas*, there is before the Senate of the United States a bill which would check all vivisection and experiments directed toward the amelioration of disease among the lower animals and men; and, *whereas*, such experiments as are con-

ducted by the Bureau of Animal Industry are of incalculable value to the live-stock industry of the country; and, *whereas*, this bill in our opinion is a misdirected philanthropy, which tends to protect the few at the expense of the many; be it *Resolved*, that the Virginia State Veterinary Medical Association request the members of the Senate and House of Representatives from this State to oppose to their utmost any measure tending to curtail the usefulness of the Department of Agriculture in the District of Columbia in its investigations of the diseases of live-stock."

The report of the officers showed the Association to be in a most flourishing condition, and it now includes in its membership all of the legitimate veterinarians in the State, with the exception of three, and we hope to have them as members at our next meeting.

After adjourning, the Association, as a body, visited that fine old Virginia resort, Ocean View, and enjoyed the luxuries thereof.

The Association adjourned to meet at Staunton, Va., January 5, 1897, thereby bringing to a close one of the most successful meetings ever held by the Association.

GEORGE C. FAVILLE, D.V.M.,
Secretary.

THOMAS M. SWEENEY, V.S., Richmond,
Secretary-elect.

W. H. HARBAUGH, V.S.,
President.

ASSOCIATION OF VETERINARY FACULTIES OF NORTH AMERICA.

THE third annual meeting will be held at Buffalo, New York, September 4, 1896. The headquarters of the Association will be the Genesee House, where a special parlor is provided for the meeting.

The programme consists of the reports of several committees, notably those of the committee on a uniform veterinary degree, and the committee to devise legislation in regard to a uniform examination by State Boards of Veterinary Examiners. The action upon these reports by the Association will be of great interest and importance. The subjects laid over from the last meeting for want of time will now find consideration. These subjects are:

1. A uniform course of instruction, *i. e.*, the subjects that should be taught in every veterinary school and the time devoted to each. Speaker, Prof. J. W. Adams, Philadelphia.
2. Mutual recognition of students by colleges belonging to the Association of Faculties. Speaker, Prof. H. D. Gill, New York.
3. Competitive examination for position in the Veterinary Faculties.
4. College fees.

It is to the interest of the University Veterinary Departments and to the individual veterinary colleges to send representatives to the coming meeting. All voting delegates must be properly accredited by their college authorities.

OLOF SCHWARZKOPF,
Chairman Executive Committee, Association of Veterinary Faculties.

NIAGARA AND ORLEANS COUNTY VETERINARY ASSOCIATION.

ON Monday, July 27, 1896, a meeting of the veterinarians of Niagara and Orleans Counties was called by J. P. Thomson, Secretary of Niagara County, for the purpose of considering the organizing of a County Veterinary Medical Society and also to discuss matters bearing upon the profession in general.

The meeting was called to order at 4 P. M. by J. P. Thomson, Secretary.

Moved and seconded that Dr. Stocking be appointed chairman; carried.

On motion, it was decided to proceed to the election of permanent officers from those veterinarians present; carried. Ballots cast, and Dr. Martin, of Lockport, was elected president. Dr. Stocking, of Medina, was elected vice-president. Moved and seconded that the present secretary, Dr. J. P. Thomson, of Niagara Falls, be considered secretary-treasurer; carried; and that Dr. Kesler, of Holly, Dr. Hunter, of Lewiston, and Dr. Williams, of Middleport, be appointed censors; carried.

Topics relating to the uplifting of the profession, the protection of the community against imposition and the animals against cruelty at the hands of illiterate practitioners, were discussed.

Reports relating to the use of tuberculin and mallein as diagnostic agents, and tetanus antitoxin as a curative agent, were listened to.

The secretary was instructed to have the report of meeting published in the journals for August.

A committee was appointed to formulate constitution and by-laws, to be presented at next meeting, which shall be held at Medina, August 18th, at 2 P. M.

Moved and seconded to adjourn; carried.

J. P. THOMSON,
Secretary.

NEW YORK STATE VETERINARY MEDICAL ASSOCIATION.

THE seventh annual meeting of the New York State Veterinary Medical Society will convene at the Genesee House, in the city of Buffalo, on September 4th and 5th, next. The officers of the Society earnestly desire as large attendance at this meeting as possible. The occasion will be full of interest, both professionally and socially, and one that will not again present itself for a number of years, as the United States Veterinary Medical Association meets during the same week in that city, giving us all an opportunity to make acquaintances from all parts of the country, which will be profitable and pleasant. The Genesee House gives special rates to veterinarians, and the trunk-line roads offer $1\frac{1}{2}$ rates.

CLAUDE D. MORRIS,
Secretary.

Missouri State Veterinary Medical Association meets at Mexico, Mo., on August 26, 1896. Papers on the following subjects will be presented: "The Veterinary Profession;" "Impurities of St. Louis Dairies;" "Parasites Common to the Ox and Sheep;" "Leucocythæmia (With Report of Case in a Dog);" "Remarks on Texas Fever;" "The County Practitioner," and Reports of Cases.

The semi-annual meeting of the Pennsylvania State Veterinary Medical Association will be held in October this year at Reading, Pa. This change from September to October has been made owing to the many important State meetings and the United States meeting occurring about the regularly appointed time. An excellent programme is announced, and will appear in the September issue.

GLEANINGS.

The Bureau of Animal Industry recommends the following mixture as a cheap and effective compound for destroying the growth of horns in calves under one month of age: 50 per cent. of caustic soda, 25 per cent. of kerosene, and 25 per cent. of water. An emulsion of the kerosene and soda is prepared by heating and vigorously stirring. This is then dissolved in water. Care should be exercised that it does not come in contact with anything but the horny protuberance.

London, England, reported another outbreak of contagious pleuro-pneumonia in April, appearing in the district of White-chapel.

Modern Medicine and Bacteriological Review, in the June number, says: "From an extended series of thoroughly scientific experiments we learn that milk from cows with tuberculous udders is of an extremely virulent nature; further, buttermilk, cream, and butter derived from such milk contain tuberculous matter actively injurious to man. Since we can, as a rule, know nothing of the condition of the cows from which we obtain our milk, it must be evident that all dairy-milk should be boiled before being placed upon our table."

Chief Milk-inspector Byrnes, of Philadelphia, finds the pure-food act passed by the last State Legislature a very efficient aid in dealing with those who violate the laws in offering for sale impure milk or milk-products not up to the standard.

Infectious pneumonia among horses has been quite prevalent the past three months among many of the large stables in several of the large Eastern cities. The fatalities have been quite numerous.

Equal parts of acetanilid and boric acid as a dressing-powder, after cleansing the parts with creolin, proved a very satisfactory

and prompt healing medium in the after-treatment following the removal of a fatty tumor, weighing thirteen ounces, from the base of the ear of a highly-bred trotting-mare at the Philadelphia Veterinary Sanitarium.

A very curious case was presented at the Philadelphia Veterinary Sanitarium in July for treatment. A bay gelding about thirteen years of age, used mostly for saddle purposes, owned by the present owner about nine years, during which time he had never noticed the penis protruded from the sheath in urinating. The sheath had become so offensive as to make the use of the animal very unpleasant and annoying. Examination revealed a small atrophied penis at the posterior portion of the sheath, perfect in shape and outlines; urethral opening normal; no ulceration or tenderness; an inflammatory seborrhœa of the sheath, with intense inflammation and denudation of the lining membrane of the sheath. Warm-water injections freely charged with creolin and a dusting-powder, composed of boric acid, starch, and lycopodium, insufflated over the parts, in eight days removed all offensive odor, lessened the discharge to almost nothing, and reduced the redness and excoriation of the parts.

The *Breeders' Gazette* says in regard to the horn-fly that is producing so much loss among those who give attention to the summer feeding of cattle: "Various means of protection have been offered, but most of them require so frequent renewal of the applications that the time and difficulty in so doing make them of little practical value. Prof. Scovill, of the Kentucky Experiment Station, has successfully used a kerosene emulsion applied by a small spray-pump. In a small herd this emulsion is made in the following proportions: One pint of soft soap (or one-fourth pound of hard soap dissolved in boiling water), and one pint of kerosene in fifteen pints of water, thoroughly whipped and churned together. At the Indiana Experiment Station one quart of fish-oil, to which is added two tablespoonfuls of crude carbolic acid. These liquids are applied over the body with flat paint-brushes four inches wide. The most promising plan seems to be that of breaking up the nests. The manure gathered up or broken to pieces within a day or so throughout the pastures, as in these deposits are to be found the eggs, will greatly aid their effective extermination. Dry hot weather retards their multiplication; wet weather encourages."

Dr. Cecil French reports a case of canine cryptorchid noted in a post-mortem recently held. Dr. French also reports a case of tuberculosis in a setter bitch, with nearly every organ in the body affected. Diagnosis confirmed by bacteriological investigation at the Army Medical Museum. Tuberculin injected in this animal gave no reaction.

Dr. M. Francis, of the Texas Experiment Station, reports that the use of crude cotton-seed oil in the dipping-vats, covering the water in the vats to the depth of three-fourths to one inch, and having the cattle swim through, proved a very effectual and harmless means of dealing with the ticks. Other oils are being tested.

PERSONAL.

Veterinarian E. W. Heggie, of Lexington, Ky., was one of the judges of thoroughbreds at the recent horse-show at Toronto.

Dr. Leonard Pearson, State Veterinarian, retired from practice on July 1st, owing to the great demands on his time in his official position.

Dr. J. E. Ryder was among the unfortunates at the recent fire in the American Horse Exchange, New York City, having lost part of his office equipment.

Veterinarian Hirsch has invented a rubber shoe for horses that covers the entire foot and laces up the front at the coronet. It is intended to be removed from the feet when in the stable.

Dr. Bartholomew, of Berwyn, was an interested visitor at the Devon open-air horse-show.

One of Pennsylvania's coterie of M.R.C.V.S.'s languishes in one of the jails adjacent to Philadelphia.

Dr. George S. Baker, Inspector of the Bureau of Animal Industry, has been transferred from Chicago to San Francisco, where he is in charge of that port.

Dr. J. H. Adamson, of Washington, D. C., has been sojourning for a period in the region of St. Paul, Minn., in quest of better health.

Prof. Williams, of Bozeman, has been on a three weeks' vacation for rest and recuperation. Out of hearing of locomotives, away from telegraph-lines and an uncertain weekly mail, one feels like envying him under such pleasant circumstances.

Prof. R. S. Huidekoper, editor of the JOURNAL, has gone to the White Mountains with the hope that the higher altitude may more rapidly restore his impaired health, which we are sure every JOURNAL reader wishes for him.

Dr. James B. Rayner, of West Chester, has been quite seriously ill, but we are glad to report his convalescence.

Dr. A. J. Sheldon, of Springfield, Mass., has removed to Boston, and may be addressed at 50 Village Street.

Dr. E. P. Schaffter, of Mt. Eton, Ohio, has accepted an appointment in the Bureau of Animal Industry, and has been stationed at Kansas City.

A. S. Alexander, V.S., of Evanston, Ill., has been appointed an Assistant State Veterinarian. He is also instructor of Hygiene, Breeding and Management of Domesticated Animals in the Chicago Veterinary College, veterinary editor of the *Breeders' Gazette*, and proprietor of the remedy, Umbilicure, sold in the markets.

Dr. T. J. Turner, formerly State Veterinarian of Missouri, successfully passed the civil-service examination, and has been appointed an inspector and assigned for duty at Kansas City, Missouri.

State Veterinarian White, of Missouri, was denied the right at St. Louis of testing the cows for tuberculosis under the recent act governing the milk-supply of that city.

Dr. S. J. J. Harger has an interesting article in the *Whip and Spur* of July 16th, on "Milk of the Buffalo."

Dr. W. A. Porter, of Dunksburg, Mo., has succeeded to the practice of the late Dr. W. E. Smith, of Sedalia, Mo.

Dr. Alexander Glass and family, of Philadelphia, are quartered for the summer at Chelsea, on the Atlantic coast.

Dr. H. D. Gill, of New York City, has recently taken to agricultural pursuits as a side-issue in the scope of his many lines of work.

Dr. C. A. Cary, of Alabama, is travelling through the West, and has been a recent visitor to the Chicago, McKillip, and Kansas City Veterinary Colleges.

Dr. Joseph Hughes, of Chicago, has been on a trip from his city in search of rest and recreation.

Dr. J. P. Turner, Fort Meyer, Va., has been on a leave of absence for fifteen days at his home in West Chester and among his professional friends in Philadelphia and vicinity.

Dr. Charles H. Ford, late House Surgeon of the United States College of Veterinary Surgeons at Washington, D. C., has gone to locate in practice at New Orleans, La.

Dr. Fred. Torrance, of Brandon, Manitoba, holds the position of district veterinarian for his locality.

Dr. C. P. Lyman, of Boston, has repaired to his farm at Jaffrey, N. H., for a period of rest.

At both examinations conducted by the Pennsylvania State Board all the members, namely, Messrs. Harger, Hoskins, McNeil, Sallade, and Walters, have been present to conduct the examinations.

Prof. Hermann M. Biggs, Director of the Bacteriological Laboratories of the Health Department, City of New York, sailed for Europe July 1st, seeking recreation and at the same time visiting the various bacteriological laboratories of Europe.

Dr. Thomas Giffin, with his family, will spend the summer at Long Branch.

Dr. H. D. Gill has observed two cases of localized tetanus.

Dr. M. O'M. Knott is located at Plainfield, N. J., where we learn he is enjoying the confidence of the people and reaping the benefit thereof.

Dr. Henry Henning, for a number of years assistant of the late Dr. James Hamill, of New York, is now located at 512 East Seventeenth Street, where he has opened a hospital.

Prof. Essling, of Berlin, has been sent to this country by the German courts to investigate the Kneeb case. The latter still lingers in confinement, and the mare Bethel, said to be a ringer, is now on the Kneeb farm in Nebraska. She will be examined, and other information sought concerning this now famous case.

We trust that Prof. Essling may be a visitor to our U. S. V. M. A. meeting at Buffalo in September.

Veterinarian C. W. Stowe, of Saginaw, Mich., has taken an active interest in the Master and Journeymen's Horseshoers' School conducted there during the past winter.

DRIFTWOOD.

A Duluth, Minnesota, printer, has trained his two greyhound dogs to furnish the motor power for running his printing presses.

The smallest living horse in the world, of Orange County, Ohio, is the offspring of ordinary sized horses.

A number of claims have been found against the stockholders of the Ohio Veterinary College, at Cincinnati, by a referee appointed by the courts. The majority of the stockholders were found solvent. One of the stockholders proves to be a former dean of the school, but is noted as among those who are insolvent.

Miller's Hog-fever Cure Company is another corporation just organized in Iowa City, Iowa. Dr. John J. Miller, formerly a member of the U. S. V. M. A., but dropped from the rolls for failure to comply with its rules, is the moving spirit.

It is to be hoped that new editions of the Department of Agriculture books on *Diseases of the Horse* and on *Diseases of Cattle*, and *Cattle-feeding*, will not meet the fate of many of the first edition, in being offered for sale at a nominal figure by bookstores over the country.

There will be many changes in the college classes next year. Students are realizing the necessity of a higher education for entrance to practice in many of the States.

The horseshow in Washington Park, Chicago, on June 27th, was well attended. This is the first outdoor show ever given in the West, and will hereafter be an annual event, to replace old-time Derby Day. It is conducted under the auspices of the Northwestern Breeders' Association.

New York County has 328 registered veterinarians, 217 of the number by diplomas, the remainder by affidavit. Kings

County 112 registered veterinarians, 78 of whom have diplomas, the other 34 by affidavit.

Secretary Morton says that the adherence to civil-service rules in the Bureau of Animal Industry has improved the service, and the competency of the employés has been decidedly raised from the time the changes were made. This is a grand tribute to the merit-system of appointment.

NEW INVENTIONS.

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A veterinary obstetrical instrument, consisting of a handle-shank, with a guide-loop at one end, at the other a circular group of divergent, normally separated spring-wire jaws, having terminal loop-eyes, a draw-cord passing through the eyes, a spider adjusting-head arranged to move entirely within the group of wire jaws, and so arranged to collapse the spring-wire jaws within a prescribed compass, and to hold the same rigid during insertion.

A device for ringing hogs.

A horseshoe, with flanges at the toe and heels, made wider at one end than the other, so dovetailed as to lock with a key device, so as to be removable when desired.

A horseshoe with a detachable heel-bar.

An automatic stock watering-trough.

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ON THE EXTERMINATION OF THE CATTLE-TICK AND THE DISEASE SPREAD BY IT.¹

BY COOPER CURTICE, D.V.M.,
MORAVIA, NEW YORK.

I AM honored by your President in being invited to address you upon one of the two most important epizootic diseases now to be found among cattle in the United States. I prefer to present it to you under the name "tick fever," as the tick, *Boophilus bovis*, is as far as is yet known the most important, if not the only, factor in its transmission. You will recognize by this name that disease to which more terms have been applied than to any other—a fact which indicates the lack of precise knowledge concerning it held either by the laity or profession, viz.: Southern cattle fever, splenic fever, Spanish cattle fever, Texas cattle fever, Carolina cattle distemper, Mexican or Indian cattle disease, distemper, bloody murrain, red-water, hæmaturia, splenic fever, hæmoglobinuria, tick fever, acclimatization fever, etc.

It is the relationship between the tick and the disease, and the means of eradicating them from Virginia and the United States, to which I invite your attention. Repeated experiments by the U. S. Department of Agriculture, by your colleagues Harbaugh and Niles, of this State, by Dinwiddie, of Arkansas, and on a larger scale by the stockmen of the country, have shown conclusively that the tick does give the disease to susceptible cattle. Among all other experiments made to demon-

¹ Read before the Virginia State Veterinary Medical Association at Norfolk, June 24, 1896.

strate another mode of infection, not one has succeeded, excepting the direct transmission of blood from previously infected but healthy cattle to susceptible cattle. Since this mode of infection is necessarily rare and not possible except by human agencies, it may be passed by as of secondary importance in the transmission of the disease.

Permit me to repeat, ticks are the only known means of spreading the disease. If so, is it not self-evident that to prevent the disease spreading the distribution of the tick must be further restricted and finally the species exterminated?

In the report of the U. S. Department of Agriculture on Texas fever, 1893, the question as to there being another mode of infection in those States where the disease is more or less permanently located is left an open one. Nor can it be settled until some territory is found in which the cattle are free from ticks, and in which cattle brought there die of the disease without having been infected by ticks. When such a place is found the study of the disease may be taken up just where it has stopped, and new causes or methods of transmission found. This leads us to the question of climatic, telluric, or other conditions which may be supposed to foster and spread the disease aside from the parasite, which we know distributes it far and wide.

The prevalence of the disease in the Southern States in spring, summer, and autumn, among cattle which are merely moved from farm to farm, or, at the most, not more than a few miles, is a strong argument that neither climate nor soil has aught to do with the spread of the disease, for they are the same. Mr. A. W. Bitting, in Bulletin No. 28 of the Florida Agricultural Station, 1894, describes an outbreak in a herd of cows, bred by the owner near Tallahassee, and kept sound until moved to a tick-infested farm near-by, where the "land and water were about the same," and all became affected.

In Georgia there are enormous annual losses from red-water among cattle which are merely moved about in neighborhoods, and farms are classed as infected although their soil and water privilege are identical with neighboring places where no native cattle are lost but where cattle die when moved.

In your own State there are adjoining counties in which murrain is known or not known; farms which have never lost cattle, while other cattle brought to them or taken from them frequently die. Nor is it necessary to move them from a highland to lowland or from the north to the south. The move-

ments may take place in any direction, but the results will be the same.

In this disease two classes of cattle must be constantly borne in mind—those that have become unsusceptible and those that are susceptible. The death-record in infected localities indicates the presence of infection and of susceptible cattle, and when they are raised near-by that the soil and climate, which is the same for all, have no more immediate relation to the disease in Florida than it would have on neighboring farms in New York. When spread the disease will break out in either; when confined there will be no outbreak, although the means of spreading be close at hand in both.

Counties and farms in this and other States have been infected and reinfected, and are to-day as free from disease as any in Maine, though south of or north of or east of or west of others, or higher in altitude than others, or lower than others. and containing more or less bottom-lands than others, and growing more or less pine or oaks than others, and watered by standing water, running water, etc.

Further, when outbreaks are closely scrutinized the pestiferous tick is always found. In the murrain counties, Buckingham, Patrick, Pittsylvania, Gloucester, Lunenburg, and others, cattle-ticks abound. When Prince Edward County before the war lost her cattle by murrain the ticks, I am informed, were there. Since then they have disappeared, and cattle are no longer killed by them, excepting as farms are reinfected, as may occur anywhere.

If you will ride with me east, west, north, or south through this State and inspect farm after farm and make inquiries, you can come to no other conclusion than that this disease of many aliases is coincident in distribution with the tick, irrespective of altitude, topography, drainage, soil, food, verdure, or climate. Some or all of these factors may influence the spread of the tick, but not the coincidence of the tick and the disease.

Let me explain what I mean by disease in this instance. I include not only the paroxysm of fever that an animal may have, but the changed condition of its system which permits it to raise the ticks with impunity. In this sense a cow perfectly healthy for all other purposes might contain blood which at any time would disease others under favorable conditions. All blood for this purpose must be considered in a pathologic condition; it is altered from the normal. There is then, so far as

is yet known, nothing in the climate or soil of the so-called permanently infected country which we may consider causative of the disease.

Both history and experiment indicate the contrary. In the sixteenth, seventeenth, and eighteenth centuries this country was colonized by two classes of people, who brought their cattle with them. You well know that the Spanish colonized the West Indies, Florida, Mexico, Texas, New Mexico, and California, and the northern European nations the thirteen colonies. The Spanish endeavored to push northward along the Atlantic coast, or at least to hold the southward advancing pioneers in check. Until the cattle of the Spanish began to mingle with those of the English to the north, those of the latter prospered and multiplied. After that cattle died from tick-fever, and have continued to die in numbers proportional to the movement and number of cattle involved. This occurred as early as, if not earlier, than the eighteenth century. I believe that Carolina cattle were infected from Florida or Cuban cattle. Virginia cattle were certainly infected by Carolina cattle, and also, I believe, by cattle introduced by coastwise traders, who traded in barter between Cuba and other West Indian Islands and Maine. The disease had become so prevalent in your State in 1750 that special legislation directed against it was necessary. This legislation has been amended from time to time, an amendment being adopted at the last session of your Legislature.

As the Spanish cattle spread over Texas, and the great markets of the North, about 1840 or even before, began to require beef, the Texans were driven over trails northward, spreading disease along their route. The disease from these centres slowly spread unhindered by law or man until it was checked by the laws of climate, which restricted the spread of the disease. The Spanish invader of this continent was responsible for many things. Could he have planned as diligently as he did inquisition methods to have left behind him a cattle-plague which would harass his foeman for ages, he could scarcely have found a better means than the tick.

The experiments of the Bureau of Animal Industry show as conclusively as may be that no disease-giving property is communicated by cattle to the ground. The matter up to now then lies this way. This cattle-plague is nothing more or less than the result of an invasion of this continent by the parasitic tick which cattle carry with them.

Is this invasion permanent or temporary? Mr. H. J. Wing, of the Experimental Station in Georgia, picked and killed every tick on his cows in 1892. Since then he has had none. Although he bought ticky cows, he confined them in the stable until he had cleaned them. On that farm cattle from all parts are mingled and none die. Last year he cleaned an adjoining farm of ticks by regular hand-picking, permitting none to escape. Although the cattle went to pasture daily, the process occupied but little time, three times a week for a couple of months, although the observation was continued longer.

The invasion of these farms was, therefore, but transient. The invasion of many counties and farms in Virginia, although well within the permanent area, is well-known to have been transient. There is no farm in this State or any other State but that is transiently infected by ticks. The word permanent as it relates to ticks has no place in the American vocabulary. All ordinary herds may be freed with comparatively little trouble by confining animals and hand-picking. If they are kept on an enclosed farm, regular, persistent hand-picking will free them. And the labor is not so great as it seems. If cattle roam upon commons, then all owners must keep their own cattle free. This will be found to be the most effective means for freeing all cattle in Virginia. If, however, enclosed land is abundant, the ticks may be kept from cattle by picking off those on them at the time and then turning the latter on to uninfected pastures hitherto unused by cattle. Thorough greasing of the hairs by cotton-seed oil, lard, or kerosene will prevent the little ticks arriving at the skin. Destruction of the ticks by burning the land in spring or by plowing will also assist the hand-picking. In Virginia and most other States I believe that there is little economy in dipping cattle. Nearly all herds are too small to permit the outlay. Where it must be resorted to those practising it must know that the operation must be carried on regularly, as often as need be, until it is quite sure that the cattle pick up no more on the pastures.

To restrict the advance of the disease northward in summer the United States annually quarantines the cattle from certain Southern States or portions of them, not permitting their transportation northward, excepting under regulation which keeps them from other cattle. This quarantine, if as effectually carried out in other States as it is now in Virginia, is very efficacious. But the United States should not seek to perpetually

quarantine, but to contract the quarantined, and thus lessen the menace at every point. It has shown that the means of transmission is a remediable one. Let it do its part in applying the remedy. It is clearly within its province to continually investigate the border-line between the quarantined and free territories, and proceed to learn the exact conditions of infection, to study the effect of local laws and customs upon its spread, to instruct the cattlemen at certain points as regards the suppression of the ticks, and to change the line in accordance with the facts and needs arising.

Whatever the future may show as to there being another means of producing the disease in the South, the Bureau of Animal Industry has shown that as soon as the ticks are removed from sections of country the cattle from these places are no menace to others, and, therefore, that the quarantine-line must be, in so far as it is practical to conform to political boundaries and natural barriers, coincident with the edge of the region infected by these pests. If for no other reason than that of uninterrupted traffic, the cattlemen of the infested region should make haste to exterminate the tick.

The Legislature of this State at its last session passed a Contagious Disease Act, which will prove very efficacious in preventing the spread of the disease in the free territory. It may apply to the uninfected territories within the quarantined region, but the fines are so heavy that complaints will scarcely be made. For instance, in those localities cattle with ticks are virtually quarantined upon their owners' farms, for there is a fine of from one hundred to five hundred dollars for permitting them upon the highway or commons.

Could the quarantine of ticky cattle upon the infected farms be rendered effective, the great question for Virginia would be more than half settled, for no owner would permit his cattle on the highway before they were cleaned of ticks, and, being in constant danger from the ticks spreading from his farm, he would be induced to remove them. When the State is ready to remove the ticks farm quarantine must be resorted to. I believe that at present a light fine of from two to five dollars per head for cattle with ticks found on the highway, unenclosed lands, or commons, and impounding them until the cattle are cleansed and the fine paid, would be far more efficacious than the high fine imposed by the present law and which is necessary to prevent violations of the State quarantine-line.

Your duties in this instance are to do all in your power to keep up a perfect quarantine between the territory partially infected and the free district. Those of you who live within the infected district owe it to your patrons to instruct them as to how the disease is spread, to show them, even if it is necessary to take some farm as an experiment, how to rid that farm of its ticks, and, more than all, to keep the public market-places and cattle ranging at large free from ticks. I have found that cattle-owners are only too willing to fall in line when once they are convinced that it is of use. You should use every means at your command to show its usefulness.

By means of the wide-awake Virginia veterinarians I believe that in less than five years tick-disease or murrain in this State will be an unknown quantity. You owe it to yourselves and to your fellows in other States to show what may be done by a few willing, courageous men. The task is a huge one, but if you do what you find to do, it will be accomplished.

I look most eagerly for the cleansing of even a certain portion of the infected territory under the direct intention of man, for it opens the way to pushing the ticks back to the Spanish isles and Mexico, and liberating cattle from disease and pests and the farmer from untold money losses. Let your war-cry be, death to the tick.

NAVICULAR DISEASE (NAVICULAR ARTHRITIS).¹

By H. L. DRAKE, D.V.S.

THE veterinary profession is indebted to Mr. James Turner for a knowledge of the seat and cause of the disease known as navicular arthritis. He alludes to it first in the year 1816, and though eighty years have rolled away little has been done since his day revealing new pathological or even etiological changes or discoveries.

Etiology. We comprehend more fully how navicular disease may be caused when we recall the peculiar anatomy of the parts involved in the process and the function that is performed by locomotion. The anterior extremities have the bulk of the body-weight to bear, and their support is by elastic-sling mus-

¹ Read before the Virginia State Veterinary Medical Association, June 24, 1896.

cles which bind the shoulder to the body, thus greatly dissipating the shock to the foot. Then the foot is composed of elastic material throughout, protecting the sensitive structure; but even this is not sufficient of itself to protect the foot from injury, so nature has further provided for exigency by placing the coffin-joint on the posterior part of the coffin-bone, instead of directly on top of it, whereby a large part of the shock of locomotion is dispersed before it can reach the vertical column represented in the common knee and arm bones. In addition to these provisions the frog, plantar cushion, flexor tendons, interarticular cartilages, and connective tissue are interposed to break the concussion and shock.

Such are the means provided for dispelling the shock to the joints and vertical bones, and, ample as they seem to appear, they nevertheless fail to relieve the parts from concussion and excessive pressure of the sensitive structure within the hoof, due to rapid pounding over hard surfaces. Hence there arises a bruise of the navicular bone, the bursa in connection therewith, and the perforans tendon; and the disease is chiefly found in those animals that are high-knee actors or rapid pace-makers.

Professors Smith and Law differ as to the class of horses among which it is most commonly found. Smith says: "It is rare in racing, hunting, and even in trotting horses, as long as they are used on the turf." Law says: "The thoroughbred is more commonly affected with the disease than any other." But the fact is that besides the exciting causes must be considered the predisposition in individual animals, most prominent among which are heredity and vice of conformation, and added to this the environments of domestication and use, such as dry stables, *i. e.*, board floors in stables, hard and fast work, bad shoeing, and punctured wounds.

Mr. Turner writes: "Contraction mostly takes place in animals that have been accustomed to be shod before the age at which they have attained their highest value for work, *viz.*, five years, but this contraction is not, however, necessarily connected with lameness. The next deviation from nature is the passive state to which the foot is subjected for twenty-four hours, and sometimes several days. Compare this with the few hours during which a horse in a state of nature, that is, roaming at will in the pasture-field, is in a quiescent condition, and there will be no cause for surprise in the change of form, position,

character, and the state of contraction which takes place in the foot deprived of its natural pressure and motion.

The first consequence of contraction is the gradual displacement of the navicular and os pedis bones. They ascend within the hoof, and an unnatural arch is formed by the ascent of the frog.

The delicate synovial membranes lining the joint are crushed and bruised by the very material which nature has bestowed as a defence. We learn from this writer that the bruising of the synovial membrane lining this joint is the veritable source of this disease. It is engendered in the stable, but becomes permanently established by sudden violence out of it. Horses doing fast work on our hard roads, and those subject to the whims of fashion by being trained to high knee-action, are the ones that suffer most from this dreaded disease.

From the time of its discovery Turner shows conclusively that he was acquainted with the cause of navicular disease and its pathological changes.

Symptoms. In the early stage the symptoms are obscure. The animals may be taken suddenly lame for a few days, and then the lameness may entirely disappear for a short period, only to reappear in a more violent form, which finally becomes constant and aggravated. In the primary stage there may be heat about the base and posterior part of the foot; but in some instances there is no perceptible change in the temperature about the parts. The most characteristic symptoms are pointing of the affected foot when at rest, and clean appearance of limb, due to atrophy of muscles from imperfect use.

This may be seen before the lameness is manifested. The affected foot always takes a short step and the toe of the foot first strikes the ground, so that the shoe is most worn at that point. The animal has a stumbling gait, and when both feet are affected at the same time shows a stilty movement, as though he had both legs tied closely together. When made to work shows much pain and sweats profusely; also shows much pain on pressure over the seat of disease. There never was yet a philosopher who could withstand a toothache; but think of a poor horse with twenty toothaches compressed into one agony. The leg is bent with difficulty and pain, owing to the flexion of the perforans tendons upon the navicular bone.

The course of this disease is usually inflammatory, followed

by ulceration, necrosis, or ossification of bones of coffin-joint. If the disease is of long standing, there is marked contraction of horny substance of foot.

Prognosis. Prognosis of this disease is very unfavorable in cases of long standing, owing to its destructiveness to the joint and its membranes involved by this disease.

Post-mortem. Numerous dissections have shown that the navicular bone and tendons forming that joint are invariably the seat of this obscure disease. The cartilage of this joint has been found in an ulcerated condition with the bursal membrane destroyed, the bone showing caries in bad cases, and in others bony adhesions have taken place in the joint formed by the navicular bone and the os pedis, and in a few cases the foot has become disorganized and useless by ravages of this terrible disease.

Treatment. Nothing has yet been found by the profession to cure an established case of navicular disease if disorganization has taken place, although many would have us believe that they have the sure and only cure. But in cases where a cure has been effected it is certain that disorganization has not occurred in the parts affected.

We have a number of palliative remedies that are in vogue to-day, of which neurotomy stands at the head, and is mostly resorted to by the profession in city practice. The common remedy to relieve the suffering animals is to pare the foot well down, rasping the walls at heels thin, and place in a tub of medicated water for a few hours. Soak each day until a new growth is established. This may be carried too far, making the foot spongy, which must be avoided.

The soaking is followed by a good blister around the coronary substance; after the action of the blister has subsided, placing an expanding spring in angles of the heel and shoeing with light tips, and turning out on a meadow bottom for a period of rest, is a common treatment.

It only remains to be said that in all regulated stables care should be taken to keep the horse standing with his front feet resting on clay, or, in absence of clay, to stuff the feet periodically with flaxseed poultices or clay mixed with vinegar; to give regular exercise, and to avoid severe usage on hard roads; and frequent careful shoeing.

ADDRESS OF RETIRING PRESIDENT HARBAUGH.¹

IN retiring from the presidency of this Association which I have held continuously since its incipency, I must express my satisfaction on two particular points: the first is that I have earned a rest, and the second is that during my term of office we have accomplished all that we have undertaken for the advancement of our profession in this State.

To the set of officers who will to-day succeed the present incumbents we give a complete and smooth-working machine, which has been a power in this Commonwealth, and which should continue to be a power, increasing in strength and influence as numbers are added and as years roll by. It is almost incredible to think that this present Association with its present membership sprang from the handful of veterinarians who met in my office not quite two and a half years ago for the purpose of taking some step to check the incursion of the quacks with diplomas, and with the determination of doing what we professed to be able to do. Four of those six who organized this Association are still with us; they may be truthfully called the "old guard;" they are here to-day, and they have never failed to attend a meeting since we met to organize.

No matter where the meeting was held, whether up in the mountains in the extreme northern part of the State or down here by the seashore in the extreme east, these same earnest men have been on hand to contend for our personal rights and professional privileges. They recognize the fact that membership in this Association is not a mere name; they fully realize that this Association is a State institution, made such by the State legislature, and that membership in it is a responsible position; and now it is to be seen whether or not others have the courage to sacrifice time and money to carry on the work so well begun.

While it is true that pleasant social features had a prominent place at all our meetings, still we are not banded together for mere social pleasures. We were incorporated by the legislature to elevate the standard and advance the interest of our profession. We were made a State institution with a duty to perform

¹ Read at the annual meeting of the Virginia State Veterinary Medical Association, June 20, 1896.

to the people as well as to ourselves; and here the question may be asked: Have we performed that duty? In reply we can proudly point to the laws of our State, and say we have.

In a little more than two years we have accomplished much. Our calling has been lifted from its past degradation and put on an equality with the other learned professions; we are now recognized and legalized.

Questions in regard to contagious diseases are now referred to a member of the veterinary profession, instead of to the honest farmer, political granger, or a jury of laymen.

What we have done is done well, but our whole duty is not completed. We have a gigantic undertaking on our hands in our efforts to secure local dairy inspection for the different cities throughout the Commonwealth. We have to fight a monster which stretches forth its arms in all directions and clutches within its grasp all who can be controlled by fear, favor, or value received, and this monster is the wealthy breeding interest which makes a hobby of high-priced pedigree cattle until it tires of them and then unloads them on the unsuspecting dairyman to infect his smaller herd with tuberculosis.

Even from our standpoint there are two sides to this tuberculosis question. The first is the public health; and I care not whether a man believes there is much or little danger in using the milk or flesh of tubercular animals through risk of transmission of the disease to the human being, it is certain that such milk and flesh ought not to be used. Milk is part of the cow and therefore animal matter, and if the cow is tuberculous her milk is part of a diseased cow; it makes no difference how much it is boiled it is still part of a diseased cow, and should not be used for human food. The same proposition applies to meats from tuberculous animals, no matter how thoroughly sterilized, and it disgusts me to hear our would-be veterinary politicians talk of using such meats the same as they do for the lower classes in Europe, when we have meat to spare for the world. No, gentlemen, we are not in Europe and do not have to devour diseased products to prevent starvation. Let us be consistent and fight against all diseased animal products being used for human food. Another thing that surprises me is that there are veterinarians occupying high places who have the effrontery to tell us that milk from tuberculous herds, when fed to pigs, produces the same disease in them and that there is little danger of it producing the disease in human beings!

These are breeders' opinions, whether uttered by veterinarians, agricultural journals, or other hirelings. No man who sees the post-mortem lesions of a few tuberculous dairy cows wants milk from any such animals in his house, danger or no danger.

The other side of the question is the dairyman's side; we should protect him also while we are endeavoring to protect the public, and warn him against purchasing thoroughbred cows to increase the richness of his milk simply because he can buy the cow cheap. It would have been much better for all concerned if the price of the thoroughbred cow had remained high and beyond the reach of the average dairyman, for in that case there would have been an inestimably less amount of tuberculosis among our common cattle.

When I opened up this present campaign against tuberculosis I was well aware of the fact that I was sacrificing money, practice, and some friends; I knew that I was exposing myself to unjust criticisms, abuse, and falsehood; but it did not deter me; I have waged the war for more than two months, and the result is that the public is acquainted with facts they should have known long ago, and the great majority is on our side and is demanding what we are contending for, and, if I am not a false prophet, we will have it in the near future.

This question involves very hard work, but after what we have already accomplished nothing should be considered too hard to attempt, and if you go at it earnestly we will succeed. My plan has been to force the question in season and out of season, and make an object-lesson on every possible occasion.

When we have forced the institution of local dairy- and meat-inspection the breeders and dairymen will be only too glad to help us to force the State to make sufficient appropriation to begin an effort to stamp out the disease, or at least to check its spread; and when a sufficient number of States take up the question it will be discovered that the matter is a national one, and that the national government will have to take hold of it and handle it after the manner in which pleuro-pneumonia was handled, and the sooner such a step is taken the less it will cost the nation.

Mention should be made of the splendid work done by our efficient State veterinarian; many of you are aware of the stand he has taken in this war; he has put his shoulder to the wheel and has kept it there in spite of all threats and bluff of the op-

position, and when our work is crowned with success Dr. Niles will come in for his full share of credit.

Now, gentlemen, I desire to warn you that we have stormy times ahead. Vigorous attempts will certainly be made to have our examining board law amended or repealed, and we must be on the lookout so as to be able to counteract every such attempt, even before it is made, if possible. We have already received notice that the law for the control and prevention of contagious diseases will be attacked, and we must never lose an opportunity to make friends for it, for you may rest assured that it makes an enemy of every man who suffers by it. We must look to the officers of the Association to guard its interests, and we will hold them responsible for any neglect.

EXPERIENCE WITH BARIUM CHLORIDE.

BY JOS. PLASKETT, D.V.S.,
NASHVILLE, TENN.

HAVING noticed in recent numbers of some of the veterinary journals numerous articles on the effects of barium chloride in the treatment of colic and similar affections in the horse, a few remarks regarding my experience with the drug may possibly be of some interest to the readers of your journal. After reading Prof. Dieckerhoff's exhaustive and interesting article on that subject and noting the uniformly happy results he obtained from the use of it, I came to the conclusion that it was the remedy the veterinarian had long been looking for. Pilocarpine and eserine have been selling at such prohibitive prices the last two years that their use, except in special cases, has been almost abandoned. When these drugs have been used and a bill is presented proportionate to the cost of the medicine used, the objection to it is generally so vigorous that some cheaper medication is usually tried in the next case.

My experience with barium chloride has not been so large as Prof. Dieckerhoff's, neither have the results I obtained been so uniformly successful. In fact, some of my results have been of the most serious nature; and although I have had some equally happy results, still I have come to the conclusion that the drug is not one that can be relied on with any degree of certainty. In some cases the exhibition of it has been followed

by the good effects Prof. Dieckerhoff describes, and the speedy amelioration of the symptoms for which it was used; but in similar cases the administration of the same dose has produced effects which have been disastrous in the highest degree.

I shall endeavor to give as clearly and concisely as possible some of the results I have obtained from its use. When I first began using it I thought I would try the effect of it when given per orem in a capsule. The dose when exhibited in that manner is, according to Dieckerhoff, from two to three drachms. The first subject which presented itself for treatment was a gelding of medium size, which was brought to the infirmary one night suffering from colic. From the history I obtained, the horse had not been affected for more than half an hour, and on examination I found pulse and temperature normal and the animal not evincing many symptoms of pain. I administered at 6 P.M. $2\frac{1}{2}$ drachms barium chloride in a capsule, and watched the animal for about half an hour. At that time he seemed to be entirely free from pain and was resting easily. I saw him at intervals until 11 o'clock, at which time he presented the following symptoms: Intestinal peristalsis much augmented, although no action from the bowels as yet; pulse 60; animal seemingly free from pain, but showed symptoms of depression, with rather an anxious expression of countenance. Thinking everything was going on smoothly, I left him for the night, but was called at 5 A.M. next morning, and found the horse in the following condition: Animal extended on its side; pulse 120 and scarcely perceptible; flanks and abdominal walls retracted to such a degree that it looked as if he had been eviscerated, whilst behind him was a large pool of liquid excreta, and numerous similar pools were scattered around the stall. The animal was in a state of complete collapse, and in spite of heroic doses of powerful stimulants died in an hour.

Post-mortem. The stomach and intestines were completely empty, but, beyond patches of congestion and extravasation of blood in the stomach and small intestine, I could detect nothing abnormal; after this experience I came to the conclusion that the dose I had given was too large, so in the treatment of the next few cases I gave doses of from half a drachm to a drachm and a half, with sometimes fair results and sometimes no results at all. As it always took from two to four hours to have the desired effect when given in this manner, I decided to try the

intravenous method. Remembering my experience with my first case, I reduced the prescribed dose of 15 or 20 grains just one-half, and gave from 7 to 10 grains, according to size and condition of the horse. With this method the effects were much better, and I have obtained some excellent results as far as producing the physiological effects of the drug were concerned. In cases of acute indigestion accompanied by extreme tympany and distention of the intestines and constant eructations of gas from the stomach, I believe the judicious use of barium chloride intravenously, and the use of the trocar if necessary, will save a large percentage of cases that would otherwise die. But while the evacuations from the intestine have been prompt and copious, and the passage of flatus correspondingly so, I do not remember a case thus treated that has not been followed by some very unpleasant symptoms. Superpurgation or possibly just the physiological effect of the drug carried to excess has been one of these, and has been exceedingly difficult to control, but I have had no more fatalities from that cause. The exhibition of the drug seems to be followed by a general prostration of the entire system, in which the following symptoms are most prominent: In the course of an hour and a half or two hours after the injection, and usually about time the purgative effect is abating, the pulse will increase in frequency until it reaches from 80 to 110, and will become weak and small. The animal appears stupid and dull; will stand in one place with its head down and does not appear to notice anything, or to be cognizant of its surroundings. These symptoms gradually wear off, however, but the character and frequency of the pulse have given me considerable uneasiness on more than one occasion. I have yet to see in some 25 or 30 cases treated both by the intravenous method and per orem any symptoms of paralysis following, which has been noted by Dieckerhoff and others. The symptoms I have described followed the intravenous injection of from 6 to 10 grains, as 10 grains is the maximum dose I have given.

Before closing I wish to describe a case I treated in that manner about three weeks ago. The patient, a mare of medium size, had been at pasture for some time, and was observed to be showing symptoms of colic, which continued for about an hour and a half without improvement, when I was sent for. On examining the mare I found her in the following condition: Pulse 48; full and strong respirations, somewhat accelerated

evidently from the pain she was suffering; abdomen tympanitic from accumulation of gas in the intestines. Borborygmus was present to some extent, and at intervals the mare would look around at her side, lie down and roll, and show other symptoms of abdominal pain. On examining mucous membrane of eye it was seen to be somewhat injected and showed one or two small petechial spots, as if the mare was suffering from a slight attack of influenza, which has been very prevalent here for the last six months. Diagnosis, acute indigestion. Taking a ten-grain powder of pulv. barium chloride, I shook out about one-quarter of it, and, putting the rest into my hypodermic syringe, I dissolved it in water and injected it very carefully into the jugular vein. I withdrew the needle, and turning around I replaced the needle and syringe in the case, and on looking up again was surprised to see the mare staggering. I seized her head, but she swayed and staggered around for about half a minute and then fell dead. During the time she was staggering she had an evacuation from the bowels, which was semifluid and quite copious. I had no opportunity of holding a post-mortem until twenty-four hours afterward, and as the weather was extremely hot decomposition had advanced to such an extent that it was rather unsatisfactory work.

Post-mortem lesions. The stomach was filled with masticated and partially digested grass, and also contained an enormous quantity of bots. The small intestines were likewise partially filled with ingesta, and the cæcum and floating colon contained large quantities of the same. I failed to discover any pathological lesions in these organs. The lungs were somewhat congested, and the pleura showed evidences of a previous attack of inflammation in the shape of numerous old adhesions. The heart appeared normal. Where the right kidney should have been there was a large mass of disintegrated and broken-down tissue, which was about twice the size of an ordinary kidney, and contained in the centre a considerable quantity of pus. The brain and spinal cord were not examined.

What the mare died from, and whether the barium chloride was the direct cause of death, I am not prepared to say. There was no possibility of air getting into the vein in sufficient quantity to produce any disturbance. The owner afterward told me that where the action from her bowels came in contact with the grass that it killed every blade it touched. In conclusion, it

appears to me that barium chloride will have to be further investigated and experimented with before it can be brought into general use by the every-day practitioner. It is evident that it cannot be used indiscriminately, and that it can only be used with the greatest care and circumspection. It is possible that the drug I have been using is at fault, and that it contains impurities which cause it in some cases to have such disastrous effects. As for myself, after a fair trial of the effects of barium chloride, I believe that for the present I have contributed enough to the advancement of the profession in that respect, and shall retire temporarily from the field, leaving others to carry on the good work, only trusting that they may be more fortunate than I have been in determining the happy medium, not only in the size of the dose, but also in the effect it produces.

The firm of W. R. Jenkins will issue this fall an authorized translation of Professor Kobert's *Practical Toxicology*, which will be another valuable addition to the literature of the veterinarian.

Among other contributions to veterinary literature to issue from the press of the same house is a compend of *Veterinary Materia Medica and Therapeutics*, by Dr. A. C. Hassloch, late lecturer on these subjects at the New York College of Veterinary Surgeons.

Bulletin No. 12 of the U. S. Department of Agriculture, under the direction of the Bureau of Animal Industry, relating to tapeworms of poultry, is a very timely and important contribution looking to the better control of certain diseases which are so disastrous to our poultry interests, and from which the aggregate of losses annually reaches startling figures. It will occasion much interest wherever it is read and studied, and will lead to a much greater interest in the subject and result in measures to control and limit these serious losses. It is profusely illustrated, and exhibits a thorough study of the life-history and development of these parasites. Much credit is due to the chief of the department in directing this channel of work, and the earnest, thorough work of Drs. Stiles and Hassall is well displayed throughout the pages of this report.

ABSTRACTS FROM FOREIGN JOURNALS.

UNDER THE DIRECTION OF

J. PRESTON HOSKINS, PRINCETON, N. J.

SERUM THERAPEUTICS OF TETANUS. On the 22d of October Nocard reported to the Académie de Médecine in Paris the first results of his preventive treatment of tetanus. During the first half of the year 1895 he distributed among numerous veterinarians more than 1800 ten-cubic centimetre doses of his anti-tetanus serum, and recommended that in infected districts every animal suffering from a wound (*i. e.*, in danger of getting tetanus) be injected with 10 cubic centimetres of the serum as soon as possible after being wounded, and that the dose be repeated after two weeks. At the time of his report he had received information in regard to 375 animals which had been treated in this way. In all these cases the serum proved absolutely harmless and not one of the inoculated animals suffered from tetanus. All the animals inoculated belonged either to herds in which cases of tetanus had occurred shortly before or stood in the stable with animals afflicted with lockjaw; in several cases the wound had been inflicted at the same time and under the same circumstances as on other patients which were not so treated and which were attacked with tetanus. Finally, the veterinarians who had not lost a single one of the 375 animals treated with serum during the first six months of the year observed during the same period 55 cases of tetanus in animals which were not so treated. In the case of animals already sick with lockjaw treatment with serum is useless.—*Thierärzt. Centralblatt*, May 1, 1896.

CONFERENCE OF THE SLAUGHTER-HOUSE DIRECTORS AND REPRESENTATIVES OF THE CITIES WITH PUBLIC CATTLE-YARDS IN BERLIN. In pursuance of a proposition made by Mayor Zelle, of Berlin, last April, that representatives of other cities which possess stock-yards, abattoirs, etc., should be invited to a conference in Berlin to discuss the questions relative to cattle-insurance, the regulation against the spread of epidemics, the fixation of the remuneration for condemned animals, and the general interests of the cattle-yards and slaughter-houses, rep-

representatives from forty-seven cities in Germany, as well as from Vienna and Prague, assembled in Berlin, and held a conference which lasted from May 12th to 15th. The programme was quite extensive. The following resolutions were adopted:

1. The cattle-insurance question. A resolution was passed requesting the Imperial Chancellor and the several provincial governments to make, by legal enactment as soon as possible, the insurance of cattle compulsory without financial burden to the communities; and, further, if a general law of this nature could not be passed, that the authority to pass similar laws be given to those provinces which have already introduced the compulsory inspection of meat.

2. The technical utilization of condemned animals. *Resolved:* It is highly desirable that in all cattle-yards and in places connected with the same arrangements as complete as possible be made by means of which all condemned meat unfit for food may be, with full exclusion of the possibility of its being used as food, utilized in the interests of the owner; and by means of which slaughter animals, which in their fresh, raw condition are to be regarded as injurious to health, may be, under official oversight, treated and utilized in such a manner that their use as food will no longer prove injurious to health.

3. The introduction of a general law in regard to the inspection of meat. *Resolved:* The assembly of delegates recommends that the attention of the Imperial Chancellor and the ministry be called to the immediate necessity of introducing a general law for the whole of Germany regarding meat-inspection; this law to be framed after that of the Kingdom of Saxony and the South German States.

4. The question of the prevention of cattle epidemics.

Resolution I. The assembly recommends the following amendments to the imperial epidemic law of June 27, 1895: 1. In cattle-yards which are under the control of the regular veterinary police only those cattle and hogs are to be regarded as suspects of infection which have been placed in the same stable with a sick animal or one suspected of the epidemic. In this case the stable is to be quarantined. Quarantine of the whole pen can only take place when the presence of the epidemic simultaneously in several stables is officially confirmed. 2. In larger and isolated localities where there is a cattle-yard, if an outbreak of some epidemic takes place, but the cattle-yard is to be regarded free from the epidemic, then the law prohibiting the

holding of a cattle-market is not to be extended to the cattle-yard. On the other hand, if the epidemic appear only in the cattle-yard, and the same must be quarantined, then the law prohibiting the holding of a cattle-market is to be applied only to the cattle-yard. 3. The epidemic is to be considered over and the quarantine and preventive regulations are to be suspended in the cattle-yards under veterinary control as soon as the cattle and swine in quarantine have either been killed or removed to some isolated yard for infected cattle and the regular disinfection has taken place. II. Efforts are to be made to bring the following points and considerations to the attention of the Bundesrath: 1. Those places in which regular and often large sales of cattle are held must be so constructed that they can be easily disinfected. 2. In case the foot-and-mouth epidemic is widely spread in the several States the general government should appoint an epidemic commissioner. 3. A uniform method of examination in the case of animals with foot-and-mouth disease is to be aimed at, as well as in the form and contents of the symptoms of health, so that the regulations of one State shall have full validity in all.—*Thierärztl. Centralblatt*, May 1, and June 1, 1896.

INTERNAL INFLAMMATION OF THE EYE OF THE HORSE. (By Kirnbauer, chief veterinarian in Arad.) The frequent tendency of horses in Lower Hungary, and especially in the province of Banat, to a general internal inflammation of the eye followed by blindness, has led me to pay more strict attention to this disease. It is a fact not to be contradicted that the disease appears much oftener here than elsewhere, and that its intensity in regard to destruction of the sight is much greater here than in other provinces. While it often happens in Siebenbürgen that the supply of cavalry horses from Szegedin after overcoming general inflammation of the eye, only on repeated attacks, after one to two years, suffer such clouding of the lens that sight is destroyed and the disease is confined to one eye, in Lower Hungary the attacks of inflammation are of such intensity that clouding of the lens of the eye is plainly visible after the first attack and loss of sight follows often in one or two months. As a rule, both eyes are either attacked at the same time or it spreads in a short time from one to the other, so that total blindness soon results. In regard to the cause nothing positive can be adduced, the inherited disposition to blindness seems to

play the principal rôle; possibly the climate may have something to do with it; one of the principal factors may be the dusty condition of the roads and fields in summer, often lasting for months. The eyes would at least be weakened by this and affected mechanically, and perhaps also chemically, so that there would be, as a consequence, a previous predisposition to inflammation.

From January 1st until the end of June, 1895, twenty-six horses in all in the army service were mustered out, mostly on account of cataract on both eyes, and partly on account of periodical inflammation of one or both eyes. Since nothing certain has as yet been ascertained in regard to the cause of this disease, which destroys the utility of a horse for cavalry purposes, it seems absolutely necessary that on examination of the horses the eyes should be very rigorously examined with the aid of the ophthalmoscope, and every horse which shows the least defect of the eyes or evidence of once having had ophthalmic inflammation be rejected.

I will now cite some cases which I have observed: On December 5, 1894, I examined with the ophthalmoscope the eyes of the horses in a cavalry supply and found in a cavalry horse, "Nézô," contracted pupils, a light apple-green tapetum lucidum, a little stronger distention of the chambers around the papilla nervi optici, and the eyelids somewhat puffed up. The horse was attacked in January, 1895, with ophthalmitis universalis of the right eye, and had in March, 1895, a pronounced gray cataract.

In a second cavalry horse, "Nadbot," contracted pupils, especially the right, the tapetum lucidum in patches, light colored, the pupils reacted well to atropine. This mare was attacked in March, 1895, and eight weeks afterward went blind of cataract.

In a third horse, "Ocksa," which I examined three days after it had arrived, I found the pupils contracted and reacting very slowly on alternating light and darkness. No reaction was visible for two hours after an application of atropine, and I made a second, which was without result. The next morning I applied a fresh solution, and to my astonishment both pupils were as round as a circle, and the iris formed strips around them of about 3 mm. in width. Internally I could detect no signs of disease with the ophthalmoscope. Since the eyes, however, on account of their sunken position and contracted

pupils seemed suspicious, I made two more examinations with the ophthalmoscope, but found nothing to confirm my suspicions. On the thirty-seventh day the horse had a light attack of periodic inflammation in both eyes and is at present verging upon blindness.

On the other hand, certain cases occur where, in spite of certain changes in the interior of the eye, blindness does not follow for a long time. For example, a horse, which I examined for the first time in 1890, had a well-defined triangular-shaped clouding in the middle of the lens capsule of the left eye, a little further toward the external edge of the pupil; each side of the triangle was about 45 mm. long. Three years later I saw the horse again. The clouding was unchanged in the same spot and the eye otherwise healthy. Three months later the horse died of anthrax.

A second case came to my notice in March, 1895; the horse had in the left eye a long adhesion thin as a hair, and a second somewhat thicker crossing it in the shape of an inverted T. During the eleven months the horse has been here it has not been troubled with any disease of the eye.

The last two cases show that in making a prognosis a certain reserve is always to be observed. On the other hand, the other cases make it clear that a professional man should never allow the purchase of a horse whose eyes present the slightest internal inflammation.

In conclusion I will add that I have become acquainted with a great part of the horses of southern Hungary through examining them, and that from 8 to 10 per cent. of the horses which are otherwise acceptable must, after being examined with the ophthalmoscope, be rejected on account of some defect in the eyes. Since there is hardly any disease which incapacitates a larger number of good and young horses than this periodic inflammation, it is to be recommended that military veterinarians endeavor to have a course on the use of the ophthalmoscope, similar to the one on bacteria, introduced into the veterinary schools at Vienna, Lemberg, and Buda-Pesth, and that only such veterinarians as are proficient enough be appointed on the examining boards.—*Thierärzst. Centralblatt*, May 1, 1896.

ESTABLISHMENT OF A VETERINARY SCHOOL IN UPPER AUSTRIA.
At the session of the Upper Austria Landtag of January

29th, the following bill was passed: The House enacts and commissions the committee, which represents the Province, to enter into negotiations with the Imperial Government and work for the establishment of an institution for the training of farriers or horse-doctors, corresponding to the agricultural needs and circumstances, this school to be either in the Agricultural College at Ritzlhof or in any other place, provided that the institution be made accessible to people of only moderate means, and farriers be trained for the country who shall have the necessary practice, and who shall not be compelled to demand compensation which is too high and incompatible with the present agricultural conditions.

This bill was drafted by Representative Tannegger, and in speaking in behalf of the bill he said: "I picture the arrangement of the Farrier School at Ritzlhof, planned by me, about as follows: First, two or three veterinarians by profession as teachers, and twenty to forty blacksmiths who have finished their trade as pupils, the course to cover two years. Secondly, a hospital where sick animals from the neighborhood may be either cared for free or with only a small charge; and, thirdly, suitable buildings are to be erected for the smithy, school, and dwellings of the pupils."

The costs, he asserts, although pretty high, are nothing in comparison to the advantages which would accrue to the agricultural classes, and that the losses caused by empirics in one year would cover the cost of the institution three or four times.

The reasons urged for this school are: First, the training of a higher class of veterinarians in the school at Vienna, and their appointment to the larger provinces would be in no wise lessened; secondly, practical farriers whose livelihood is assured as blacksmiths would take the place of empirics; and, thirdly, quick and cheap assistance would be provided for the farmers, which would be a blessing to the cattle-breeding interests of the community.—*Thierärztl. Centralblatt*, May 1, 1896.

It is hardly necessary to remark that such a measure as this has aroused the opposition of qualified veterinarians and of all who have the real interests of the profession at heart. The *Centralblatt*, in an editorial of three pages and a half, shows the unreasonableness of the proposition, and urges the Imperial Government to set its veto upon it. In conclusion it says that the bill to which Representative Tannegger, an apothecary by

profession, has the very doubtful honor of being the father, is plainly unreasonable. Instead of aiming at a reorganization of the veterinary service of the country in such a way that, by means of the provincial funds, veterinarians with fixed salaries may be appointed in all the principal places, as has been done already in the Crown Lands of Mähren, Lower Austria, Silesia, Bohemia, and elsewhere, these veterinarians doing the sanitary police work assigned to them by the Government, instead of establishing a fixed rate of compensation for veterinary services which all applicants for a position would be obliged to accept, instead of establishing adequate compensation, by means of which the youth of his province might obtain competent veterinary training; in short, instead of proposing anything that would accrue to the real interest of cattle-breeders and to veterinary science in general, Representative Tannegger thinks he has raised up a monument to himself in his bastard proposition.

BOHEMIAN VETERINARY INSTITUTION AT PRAGUE. At the session of the Bohemian Landtag, on January 17, 1896, the motion of Representative Dwoiak, in regard to the establishment of a veterinary school at Prague, came up for the first reading. The motion was: The Provincial Committee is empowered to open negotiations with the Imperial Government as soon as possible in order that a veterinary school for the Kingdom of Bohemia may be founded at Prague, in order to meet the long-felt need of veterinarians qualified in all branches of their profession. Representative Dwoiak, in putting the motion, spoke of the reform of veterinary studies, the necessity of prolonging the course to four years, and of raising the institution to the dignity of a high school. The gist of his argument was that the purpose of veterinary medicine was not merely to protect that part of the national wealth which the agricultural classes had invested in cattle and horses, but also to protect the human organism from the dangerous accompaniments of cattle epidemics, and for this purpose there was not need of empiricism, but of the *most exact modern science*.—*Thierärztl. Centralblatt*, February 15, 1896.

At a session of the Lower Austrian Landtag on January 28 a long discussion took place in regard to the swine-plague and the methods of stamping it out. At the conclusion of the dis-

cussion the following motion was carried: The Government is petitioned to begin the reorganization of veterinary instruction, so that more attention shall be given to the practical training of veterinarians in treating the diseases of the domestic animals, especially *cattle and swine*.

In reply to this motion the Stadtholder replied that he was happy to announce that a course of instruction had been agreed upon by the Ministers of Education, representatives of the War Department, of the Interior, and of Agriculture, as well as by the veterinary faculties in Vienna and Hamburg and the Austrian Veterinary Association. It was correct that formerly only equine and canine medicine were taught in the veterinary institute; but for a number of years cattle and swine had also been treated, and excursions had been made with the students as far as practicable, in order to make them better acquainted with the diseases of cattle and the needs of the community.—*Thierärztliches Centralblatt*, February 15, 1896.

INDEMNIFICATION OF OWNERS FOR LOSS OF ANIMALS WITH BLACKLEG. At the session of the Tyrol Landtag, February 4th, the following resolution was passed:

The Provincial Committee is empowered to pay every cattle-owner who has received a 20 per cent. indemnification for loss of animals through inoculation of vaccine against blackleg, a further indemnification of 30 per cent., and to take the necessary sum of 810 florins from the general treasury if the sum set aside for epidemics is insufficient.

In the preamble to this resolution the responsibility for the increase of blackleg is laid at the door of the veterinarians, who, it is charged, used bad inoculating material, and astonishment is expressed that veterinarians could be induced to make such dangerous experiments with inoculating material without first being thoroughly convinced of its harmlessness.

The Stadtholder, in replying to this, said that he did not wish to oppose the resolution, but he did wish to exonerate the veterinarians. The inoculating material had been obtained from the same establishment in 1895 as in 1894, but this establishment (a French one) had put in other ingredients in the year 1895. The veterinarians had not been informed of this and had acted in good faith, so that all the blame rested with the firm supplying inoculine.—*Thierärzt. Centralblatt*, February 15, 1896.

TYROL PETITIONS FOR A VETERINARY SCHOOL. At the session of the Tyrol Landtag, February 12, 1896, among other things the following petition was unanimously adopted without debate:

The Imperial Government is most urgently requested to provide for the establishment of a veterinary school for the Alp lands at the expense of the State. This school has been already for years a pressing need of the cattle-breeders, and has been petitioned for again and again in vain. The people of Tyrol wish a veterinary institute in their own land, and do not mean to be satisfied with a mere extension of the Vienna school.—*Thierärztl. Centralblatt*, March 1, 1896.

ADMISSION OF WOMEN TO THE STUDY OF VETERINARY MEDICINE. Dr. Swetlin has written an article for the Vienna Chamber of Physicians concerning the study to be pursued by women, and addressed to the Chamber of Deputies. It contains the following remarkable passage: "Let the Chamber take cognizance of the fact that the Chamber of Physicians, with full knowledge of the difficulties and demands of the calling as physician, declares women to be less adapted to carry out the practice of human medicine. May the Chamber of Deputies, in consideration of the objective point of view which the Vienna Chamber of Physicians has taken, never consent to the admission of women to the study of medicine alone, but open the doors of all the faculties—pharmacy, veterinary medicine, technology, agriculture, and business to the graduates of the girls' gymnasiums, and, finally, to make admission to the high schools dependent upon finishing a course in the girls' gymnasium which shall correspond exactly to that of the boys, and presenting from the same a certificate of maturity."—*Thierärztliches Centralblatt*, March 1, 1896.

CURE OF CANCER. Six months ago important news came from Paris to the medical world in regard to the new method of treating cancer by serum-therapy. Drs. Richet and Héricourt have, according to their reports before the Academy of Sciences in Paris, succeeded in discovering this medicine. The serum is obtained by injection of the cancer-poison from mules, and experiments have been made which gave astonishingly favorable results. Lately Drs. Richet and Héricourt have continued their experiments on fifty patients. From these observations it follows that the pain is often quickly and permanently relieved

by injections of serum ; the growth becomes decidedly reduced in size ; the development of the disease is much more slow, and finally the general condition is so much improved that patients who had already been given up were able to live three or four months longer in comparative comfort. The injections are harmless in themselves—*i. e.*, they produce no local disturbance except the slight eruptions which all serums do. The two investigators draw the conclusion that the cancer-serum is not able to radically cure malignant new-formations, but it influences them in a more favorable way than any known medicine.—*Thierärztl. Centralblatt*, March 1, 1896.

RYE-BREAD WITH AN ADMIXTURE OF MALT AS FOOD FOR HORSES. The idea of enriching the bread for horses in fatty principles, and especially in nitrogen, is not new ; bran, gluten, peanuts, beans, peas, and quantities of other vegetable and even animal products have been recommended for this purpose. Lately, a baker in Flanders has proposed to add the brewery malt, previously dried, by putting two parts of dried malt to three parts of rye-meal ; he finds that the richness of bread in albuminous and fatty materials is almost doubled. This makes very valuable rations for the work-horse as well as for fattening cattle.—*Annales de Médecine Vétérinaire*, March, 1896.

VOMITING AMONG CATTLE (by M. Perrussel in *Le Progrès Vétérinaire*). The cow which the author reports had eaten in the evening some grass of a second crop which had just been harvested, then the next day some more of the grass mixed with clover, which had been cut for a week, with bran and with the leaves of beet-root. After the second meal, composed of green lucern (*Medicago sativa*), colicky symptoms appeared and a certain degree of dyspnoea, then at the end of some minutes a fit of coughing, eructations, and vomiting, which rid the animal of the lucern. After this was over rumination followed in a perfectly normal manner. The same occurrence took place again the evening afterward after a meal of lucern, and the following morning after eating hay. The author, when called to attend the cow, found everything normal barring a little distention of the rumen, and on giving her some hay witnessed the series of phenomena mentioned above. Vomiting was accomplished with considerable effort: the head, neck, and shoulders were stretched out, the back arched, and the legs drawn together.

The ingestion of liquids gave no occasion for a manifestation of this kind. The cause of these phenomena, according to the author, is found in the dilatation which the rumen had suffered by the ingestion of a large quantity of fresh grass, in the tardy rumination of the same (the animal had been yoked up and had had to pull a load just after stuffing itself with grass), and in the ulterior prehension of fermentable food. These unauthentic data led him to discard the hypothesis of orificial tumors of the stomach; the absence of dysphagia argued against the existence of a foreign body in the œsophagus. In the reporter's opinion the dilatation could have been the consequence of a momentary over-feeding; but the dilatation did not seem to explain fully the periodic throwing up of the food; there must have been connected with it an exaggerated sensibility of the wall whose excitations caused the violent reflex actions. This view is further confirmed by the quick response to the medicine furnished, which was as follows: 10 grammes of camphor and 10 grammes of bromide of potassium, together with sulphate of sodium in the form of a mucilaginous drench. A very low diet for twenty-four hours, with an increase of food the following day completed the therapeutical means employed, and at the end of eight days the animal returned to its normal diet without inconvenience.—*Annales de Médecine Vétérinaire*, March, 1896.

VETERINARIAN CAPTAIN F. SMITH, in the June number of the *Journal of Comparative Pathology and Therapeutics*, in an excellent article on "Cataract in the Horse," brings out the following prominent points:

1. The great value of the ophthalmoscope in the determination of cataract.
2. The necessity for examining the lens when the pupil is moderately dilated.
3. The concealment of the cataracts by the iris and corpora nigra.
4. The fact that a dot of opacity, even at the centre of the lens, may be compatible with normal acuteness of vision.
5. That partial opacity in the form of dots is more common than general opacity, and that such dots, if hereditary, as they probable are, show no disposition to spread or invade the entire substance of the lens.
6. Though cataract constitutes unsoundness, it need not be a cause of rejection, but a purchaser should have the acuteness of vision guaranteed.

ARECOLIN. Arecolin is in the market only in the form of the crystalline hydrobromate; in its uncombined state it is a colorless, oily, strongly alkaline, volatile fluid, miscible with water, alcohol, ether, and chloroform in all proportions. It is poisonous, stimulates intestinal peristalsis, and acts as a tænia-fuge.

Prof. Froehner states that arecolin is ten times stronger, as a laxative, than pilocarpin, and fully as powerful as eserine, while its action equals 1000 times that of powdered areca nuts. On the strength of his experience he regards 0.1 gramme ($1\frac{1}{2}$ grains) of arecolin, or 100 grammes ($3\frac{1}{4}$ ounces) tincture areca nut, as the maximum dose for horses, and 0.025 gramme ($3\frac{3}{4}$ grains) of the alkaloid, or 250 grammes (say, 8 to 9 ounces) of areca nut, as the maximum dose for oxen. Arecolin is prescribed exclusively in the form of its crystalline hydrobromate.

Arecolin has also been found by Dr. Lavagno to energetically contract the pupil of the eye. In man this effect is produced in three minutes after the introduction into the conjunctival cul-de-sac of one drop of a 1 per cent. aqueous solution of the hydrobromate; it persists for fifteen or twenty minutes, and is entirely dissipated in about one hour. The effect on the ciliary muscle is said to be more rapid, and induces a spasm which lasts from seven to eight minutes. The faculty of accommodation remains normal during the first two or three minutes, then it diminishes somewhat temporarily.

It is reported that the instillation of arecolin hydrobromate never induces cephalalgia or other nervous troubles.

The *Veterinary Record* prints the new pension rules for the Veterinary Department of the English army. The rules have received official sanction, and will, it is understood, be shortly published. They are as follows: Veterinary lieutenant-colonel, after thirty years' service, £420 per annum; veterinary lieutenant-colonel, after twenty-five years' service, £400 per annum; veterinary major, after twenty-five years' service, £300 per annum; veterinary major, after twenty years' service, £200 per annum. This scale of pensions is not likely to quicken the flow of promotion, the stagnation in which is paralyzing the zeal and energy of the officers of the department.

REPORTS OF CASES.

REPORT OF A CASE OF SUBNORMAL
TEMPERATURE.¹

BY W. H. HARBAUGH, V.S.

OCTOBER 4th, 10 P.M., chestnut gelding brought to hospital; symptoms of aggravated heaves.

Owner had noticed the abnormal breathing and cough for the past three weeks, but never saw the horse in such an alarming condition as he found him this night. Owner stated that the food was good so far as he was able to judge.

I attributed the condition to either an over-feed, or feed of bad quality, and administered a bolus composed of aloes, sodium bicarbonate, and creolin. I also gave on the tongue a dose of fluid extract of cannabis indica to allay the cough, which it did in a short time. Owner said that the horse had been worked to buggy very little each day for some time past. Horse taken home.

October 5th. Horse brought back about 8 A.M., still heaving very much at flanks, and with a new complication in the form of violent spasms of the diaphragm. On taking the temperature I was surprised to find it 95.4° F.

Thinking there might be a mistake, I took it again with the same result. I ordered alcoholic stimulants, and gave a dose immediately. Horse taken home again.

October 6th. Horse brought back at 9 A.M. He is bright and cheerful, showing no signs whatever of any ailment. Temperature with same thermometer, 100.2° F. Prescribed a course of liquor acidi arseniosi, and gave proper directions in regard to feed and water. The animal returned to his usual work, and is doing well. The only explanation I can offer for this remarkable subnormal temperature is the severe shock to the nervous system by the derangement of the digestive functions. Physical

¹ Read before the Virginia State Veterinary Medical Association, June 24, 1896.

examination failed to discover any organic disease of heart or lungs. An extended experience with creolin in an aloetic bolus both before and since convinces me that it was no factor in reducing the temperature.

FLUID EXTRACT OF GELSEMIUM IN TETANUS.

BY W. G. HOLLINGSWORTH, D.V.S.,
UTICA, N. Y.

I DESIRE to report my success with the above remedy in tetanus.

My first case, a bay gelding, sixteen and one-half hands high, used for coach purposes, owned by President Walcott, of the New York Mills Co. On visiting the animal I found a well-developed case, arising through a punctured wound of the foot, which I treated antiseptically. Placed him under half-ounce doses of the fluid extract every half hour, per rectum, as there was so much trismus I was unable to give by mouth. This treatment was continued for four days, when there was a change: muscles commenced to relax, ears move, animal could place head to bottom of manger. I used slings, which I think are to be advised in all cases. After the fourth day medicine was given by the mouth in two-drachm doses, gradually lessening in frequency as the animal improved. This animal was under treatment for three weeks. Is now as limber and supple as he could be. He received four pints in all of the gelsemium.

The second case, a mare, was much worse, with almost continual spasms. The same treatment was prescribed. I used slings. The spasms stopped on the second day. On the third day she could eat grass, and from this time continued to improve daily, and is now working.

In those cases where I have not used slings the animals got down, and that generally settled them. Two other cases treated as above made good recoveries. I find efforts to give medicine by the mouth difficult, and cause more or less annoyance to the animal. My success with this remedy has suggested reporting the same.

EDITORIAL.

THE Philadelphia branch of the American Antivivisection Society is out with two timely monographs bearing upon the subject of rabies and hydrophobia and on mimetic diseases. The variations of hydrophobia are well shown by statistical references and the practically unanimous report of a large number of prominent members of the medical profession who have given the subject special study and investigation for a long period of years. The many other diseases with similar groups of symptoms closely allied to those said to be diagnostic of hydrophobia are lucidly referred to, and the influence of fear and mental anxiety—lyssophobia—are forcibly presented. The great injury done by newspaper reports is thoroughly denounced and charged with the responsibility of a large proportion of the many so-called cases. Veterinarians who have to deal directly with rabid dogs have long been aware of the rarity of hydrophobia, and as a profession are strangers to its existence themselves, though often exposed to its alleged dangers. The writer for years has adopted a policy of impressing upon all connected with the home or ownership of dogs affected with conditions considered to be rabies an ignoring of all danger associated with prior contact with these animals, and in a district from which during the past ten years he has taken out ten or more animals so suffering there has not been a single reported case of hydrophobia. In every instance he has been able to deny the existence of this disease among dogs to reporters, with the results to the human family as above cited.

THE CAMPAIGN OF EDUCATION.

THE campaign of education is on, and we see on every side its wholesome influences. The lessons it brings to us as a people have been slowly learned, and the cost has been dearly paid. We have looked in amazement upon the citizen who dared to eat half-cooked sausages or meat puddings, and thus contracted trichinosis from his foolhardiness. But with the utmost serenity we have watched thousands annually die from conditions arising from consuming, as a totally raw product,

milk from diseased animals; from herds of cattle reeking in filth themselves; produced under such unsanitary conditions of the stables and cow-sheds that one could not enter them of a morning and remain even a few minutes without retreating again for fresh air; and this too after the stable had been opened up for the day. The attendants have deemed it unnecessary to even wash their hands, not to think of the possible need of cleansing the mammary glands, save by dipping the fingers in the milk and applying it to the teats, thus insuring the entrance to the milk of any dirt on these organs that might not be dry enough to fall off. The absence of light, not sunlight, has been deemed a wise method of contributing to the warmth of the stable; and then the flies were not so numerous, and the filthy accumulations were not so noticeable. The spring-houses were generally adjacent to the lowest part of the cow-yard, so that the drainage of the accumulated manure of the winter might saturate the earth adjacent to the little contributing rivulets which make up the spring's supply of water, and thus insure every possibility of contamination of this product which is so susceptible to every odor and so perfect a vehicle of transmission of so many products dangerous to the human system. But the light of better methods has been thrown on this state of affairs, and the eyes of a sanitary police system are opening to the needs of better work in the preparation, care, and sale of these products. The good work so well begun in Massachusetts, and so energetically pushed by determined men, has spread to the whole of the New England States, entered the Empire State, hesitates in New Jersey, is making rapid and permanent progress in the Keystone State, where every day adds to its advancement under the well-directed work of the Live-stock Sanitary Board; has crossed the Mississippi Valley and awakened the people of St. Louis, Kansas City, Sioux City, Minneapolis, and St. Paul, and many minor centres of closely aggregated people; fled to the Pacific coast, where much early missionary work had already been done, and now ramifies in a thousand directions from these chief centres of agitation. Speed the good work, everyone, for it is for the betterment of all. It will aid the producer by enhancing the value of his products; it will aid the public health boards in solving many of the perplexing outbreaks of dangerous infectious and contagious diseases; it will aid the physician in the management of his cases so often wholly dependent upon a nutrient diet, so largely found

in milk when pure and wholesome ; it will aid the veterinarian in more completely evolving the field of his greatest usefulness ; and it will be a boon to our people in better health, in greater happiness, and contribute in every way to our higher and better advancement. A pure milk-supply is second only to a pure water supply, the most important problem for any people to solve.

AT last horse-show authorities are awakening to another danger besides that of overlooking the necessity of rigid veterinary inspection of all breeding-classes. It is the use of shows by dealers who make large entries for the purpose of sale, and thus gain an advertisement for their horses and contribute very little to the real interest and objects of such exhibitions.

DON'T MONKEY WITH A BUZZ-SAW.

ALREADY we hear the rumblings of a threatened storm that has for its purpose a letting down of the bars of progress in veterinary legislation in the Empire State. Indistinctly we hear uncertain mutterings as to the severity of the laws governing veterinary science and practice in that great Commonwealth. Utterances as to the injustice of the law to a few have been heard, forgetful as it were of the fact that no law of any worth but what must for a time work hardships for some. But these latter are but for a period, and time and effort will correct ; while the law of to-day is the foundation-stone of posterity for the veterinary profession, and every true devotee longs for its higher attainment, and when he has finished his work, wishes to see it better and stronger in every way than he found it. Don't temporize with a good law for which so hard a battle was waged ! Don't try to fill it with loopholes ! Don't endeavor to correct certain apparent defects that time will quickly efface ! Don't endanger the whole superstructure by meddling with the foundation ! Don't monkey with a buzz-saw that may prove worse than a two-edged sword and cut and destroy the whole fabric around which are to be woven every just and equitable safeguard for you and your successors in the pursuit of a calling that has honor for its chief gem, happiness and joy as shining attributes as a reward for the labor it imposes, and which brings sufficient of the world's goods to every true devotee to well fill

all his daily needs, but when prostituted to the greed of gain alone loses every charm it possesses and leaves bitterness, hatred, and envy as the dregs in the cup of sorrow one drinks when he bends the profession of comparative medicine to such an unholy alliance. Forewarned is forearmed. Every man to his post. No quarter to those who would jeopardize or tear down that which has been built at so great a cost.

AFTER BUFFALO—WHERE?

SURELY it was good to have been there; and after such a reception, such an intellectual feast, such a glorious reunion, so representative a gathering, so enjoyable a time, the exhibition of the utmost harmony and true professional spirit, we say after Buffalo—where? Not because of fear, but of deep concern; for joys and privileges, such as we have tasted and feasted of at the "Queen City of the Lakes" are yearned for at all times, and only a few of our great centres of population can afford such a measure of good things. From entrance reception to the small hours of the night, when we arose from the festive banquet board, it was a season of joy never to be forgotten by any of those present, and all honor to Buffalo and the Empire State; all praise to her worthy representatives of our profession, and may peace, harmony, and prosperity follow in the pathway of all who have so well conserved the interests of our national organization and added to it an era of greater strength and power than she has ever enjoyed. This is Buffalo's response to her appeal to come and taste of the joys of her beautiful and home-like city, and we raise our voice with one accord in sincere appreciation of the bounteous hospitality so freely accorded us. Let us not be unmindful of the great debt she has laid upon the shoulders of all future convention cities, and, with this uppermost in our minds, we will then measure fairly the ability and opportunities of other sections of our country where it will be necessary for us to go in the upbuilding of our profession and our Association, and be as generous in our exactions from other centres as Buffalo has been bounteous in her giving to us at this time. With Columbus, Cleveland, Detroit, Kansas City, and Nashville seeking our favor for 1897, we repeat: After Buffalo—where?

NECROLOGY.

JOHN W. GADSDEN, M.R.C.V.S. The sudden termination of the life of this well-known veterinarian at Philadelphia on the evening of August 12, 1896, at the age of sixty-four years, closed the career of one who had earned an enviable and untarnished reputation in the profession among the people who knew him that will live many years after him, and grow brighter and more forceful as time wears on. No higher tribute could any one yearn to win than that which is paid to his lifelong career by friend and foe: "He was honest." Every criticism that lasted for the day or hour during his long career is now silenced by the consent of all in the summing up that "He was honest," and no man's money or influence ever purchased or swayed his opinion in the purchase or sale of a horse. The evildoer, the gyp, the dishonest dealer, feared him to a point of hatred, because of his untarnished reputation. Ever attentive to the needs of his patrons and always ready to respond to their calls, for a long number of years he enjoyed one of the most lucrative private practices in our country, and retired in 1891, with a well-earned competency.

He was a graduate of the London School of the class of 1858, and had served in official capacity in the old country in several of the epizootics that prevailed, and in the United States he was one of the first to be employed in the control and eradication of contagious pleuro-pneumonia. This proved a very attractive field of work, so much so that even after his retirement from practice he personally travelled many miles, in 1893, to investigate alleged outbreaks of this disease, and presented his conclusions at the First International Veterinary Congress of America, held at Chicago in the same year, challenging those who so reported to produce a single case in the length and breadth of our country. He was the prime mover in breaking up the practice of selling veterinary diplomas in Philadelphia by Dr. McClure, who held the charter and franchises of the old Philadelphia Veterinary College.

For two years he was a member of the United States Veterinary Medical Association, but resigned, as he was no longer in practice. He was a good friend of the Montreal Veterinary

College, and later the Veterinary Department of the McGill University. He was for many years one of the regular examiners of this school, and presented to that institution his library and many of the specimens collected during his long term of practice.

Dr. Gadsden was a prominent member of the St. George Society of Philadelphia, and for two years its President, where he dispensed the freest charity to the deserving needy, and was ever ready to aid the work of this organization in every way within his power.

About a year before his death Dr. Gadsden married the widow of the late Dr. Charles B. Michener, who survives him.

His remains were followed to the grave by a large number of the members of the above-named society and by many veterinarians, among others Drs. Francis Bridge, D. James, W. S. Kooker, Frank Standen, and W. Horace Hoskins.

VETERINARIAN GEORGE LEICH, of 1540 Gates Ave., Brooklyn, died on August 2, from blood-poisoning, following an injury to his little finger received during an operation on one of his patients.

The wife of Dr. William R. Rosekrans, graduate of the American, Class of '96, died in August.

AFTERMATH.

It was good to have been there.

Chairman Hinkley proved a tireless worker, and everyone was more than delighted

Messrs. McLeod, Somerville and Gangloff seemed to be always where they were needed, and their zeal in looking after the comfort and pleasure of the delegates and their friends was ever uppermost in their minds.

The re-election of that faithful watch-dog of the treasury to the twelfth term was a strong evidence of the honor and respect that the Association has for its faithful member, James L. Robertson.

Handsome badges were provided for all, and especially beautiful were those selected for the President and Secretary.

Not even the need of a gavel to call the members to order was forgotten, and the outgoing President very thoughtfully presented it to his successor as a token of the kindness of the Buffalo veterinarians, with the sincere wish that its gentle raps would win for him the same kindly attention, consideration, and support that it had brought to the retiring officer in presiding over the deliberations of the thirty-third annual gathering.

Acting Mayor Boeckel, in conveying to the delegates the freedom of the city, made many thoughtful suggestions appreciative of the importance of our work and its close alignment with successful city government in providing for the people in crowded centres that second great necessity—a pure milk-supply.

Plenty of good water at the Convention hall, a bureau of information at the hotel headquarters, and members of the local committee of arrangements on every side were some of the thoughtful provisions made for our comfort and entertainment.

Journalistic enterprises were well represented by Editors Bell, Pearson, Gill, Berns, and Hoskins.

At one time representatives of eleven colleges could be noted on the seats of the Convention hall.

The decorations at the Genesee Hotel and the placards of the Convention programme at the hotel and university were thoughtful suggestions, and the latter were fruitful of much saving of the officers' time and a great convenience to the delegates.

Our second day was ushered in with strains of beautiful music that hovered around us on our trolley and boat ride and back to our chosen city. This feature of our entertainment was furnished by one of Buffalo's finest bands.

Agricultural Experiment Stations were more than well represented, and they took the initial steps toward an affiliated organization of their representatives.

Section work in our national organization is rapidly making itself felt as a future necessity, and no doubt will greatly enhance the power of the Association throughout the land.

Alabama was represented, alike Minnesota, Nebraska, New Hampshire, Vermont, and Connecticut, with a strong contingent from Massachusetts.

Iowa, Kansas, Tennessee, Michigan, Maryland, Ohio; and Illinois sent representatives of their States to speed the good work.

The provinces of Quebec and Ontario were there, too, and soon the question of changing our name to American Veterinary Medical Association will be a leading question.

"He was a good square fellow," so said the conductor of a Buffalo trolley car when he was handed a nickel by one of the delegates, who, in his haste to stop the car as he was being hurried by his hotel, rang up a fare instead.

The Gorge trolley-ride and the steamer-trip down the lake, with the bounteous spread of all the good things and the kindness of our friends, will never be forgotten.

The largest and most representative convention ever held in the United States.

Manitoba was well represented. Montana had her quota; Louisiana one of her strong devotees of the profession, and two more of her veterinarians have entered the ranks.

The probationary period of six months for all Bureau of Animal Industry inspectors seems a wise provision, and enables heads of departments or stations to judge of the relative qualifications of new appointees and to relieve those from duty who are unfitted for the service, without any stigma thus resting against them.

The disposition of all the members of the U. S. V. M. A. to obey its mandates augurs well for the profession, and is an acknowledgment of the high standing of the Association in veterinary circles.

We are glad to note that so many of the members and the profession so fully appreciate the fact that, whether they are able to attend the Convention meetings or not, it is a duty to contribute to its work and power to do good by joining and adding their initiation fees and dues to the fund which is used in behalf of the whole profession.

Member Wende, of the Committee on Diseases, was much relieved when he had waded through such a mass of important though oftentimes amusing statistics of the prevalence of disease.

President Osgood well merits the honor accorded him, and fully appreciates the responsibilities of such a charge. His

broad ideas, his high conceptions of the value of association work well equip him to lead us on to higher work, better attainments, and a stronger organization.

The recognition of Drs. R. R. Bell, M. R. Trumbower, and M. Stalker for Eastern, Central, and Western Vice-Presidents respectively places a strong trio to aid the chief executive.

The Army Legislative Committee will have added Dr. Austin Peters, of Boston, Mass., to aid Messrs. J. P. Turner and John R. Hart. This important work rests safely in their hands.

Prof. A. Smith, of Toronto, proved a royal entertainer of those who had the pleasure of the trip to Canada and the Industrial Exposition in that city.

Under a suspension of the rules suitable recognition was made of the death of Dr. John W. Gadsden, and resolutions of respect were placed upon the records of the Association.

The Publication Committee had its own way all through, and the newly elected President again placed this important work in the hands of Chairman Williams and his old assistants, Messrs. Hinkley and Stewart.

Too much praise cannot be given Secretary Stewart for his successful work in behalf of the Association during the past year.

The prospects of a better filled treasury will greatly aid the new officers and strengthen the Association's hands for renewed effort.

Potted plants, choice vessels filled with beautiful flowers, and gracefully arranged sweet-peas woven in a green background around the entire banquet-table were beautiful to the eye, and an elegantly prepared *menu* of tempting and appetizing dishes greeted the keen and appreciative appetites of fifty-eight of our number as a fitting close to our deliberations at the Genesee Hotel.

Hands across the sea were very suggestive in the missed snapshot camera scene at the head of the banquet-table when those warriors of veterinary education, Messrs. Smith and McEachran, grasped hands over the future of higher veterinary work in North America. It was good to see them there; but there was one other missed to complete the scene, viz., our much-loved member, Prof. Liautard.

We will play that game of cards some other day when the lake is not so rough and the fishes not so hungry.

I won't lie down there, for it looks too much like a morgue. Cut my head off.

Only three good sailors in the party; but then it was very rough, and chocolates were not suitable food. What a dismal sound came from the supper-bell.

Ever going southward, it was not surprising that the way to the hotel early in the morning seemed in the wrong direction.

The Buffalo University building proved a very suitable place for the Convention.

Those who elect to conduct a boom in the interest of their friend should go to bed earlier and not reach the arena of battle an hour and a half after the appointed time for the election.

I would like to be your Trilby, even though you are a Sengali and a Czar Reed.

The lady visitors, larger in number than ever before, will never forget their trip to the "Queen City of the Lakes" and the unceasing kindness and courtesies tendered them by Mrs. Nelson P. Hinkley.

The Keystone State was well represented, and high was their praise of the kindness of their colleagues in and around Buffalo.

Member Hart, of the Army Legislative Committee, made a strong appeal for help for his committee, and vouchsafed the promise that success would crown their efforts at the next session of Congress.

Messrs. James Robertson, McKenzie, and McAnulty made strong pleas for help and recognition for the work among the horseshoeing craft, and, though a wide diversity of opinion prevailed, resolutions of encouragement were subsequently adopted with but two dissenting voices.

The Buffalo *Horse World* of September 4th contained a very good account of our convention.

Between Nashville, Tenn.; Columbus, O.; Detroit, Mich.; Kansas City, Mo.; and Cleveland, O., there is sure to be considerable rivalry for the convention of 1897. It is a wholesome sign of prosperity.

Buffalo's reception and entertainment of the thirty-third annual convention surpassed all affairs of a similar nature, and earned for them the reputation of royal entertainers.

Much has been said, a great deal can be said, but the least said was the final conclusion in the Association of Faculties and U. S. V. M. A. Committee as to past differences of opinion as to the proper organization of the former body, and this conclusion makes easier the mending of any breaks in the Association fabric. Its report was accepted and all acquiesced in its acceptance, and the utmost harmony prevailed in the deliberations of this body, at which some eleven veterinary schools were represented. Many features of future teaching and requirements for matriculation were discussed, and from it is hoped a single plan may be devised for carrying out a single matriculation examination.

THE BUFFALO RESOLUTIONS.

Whereas, His honor, acting Mayor Boeckel, with all the numerous demands which have been made upon his time, has honored us by opening our Convention and extending a cordial welcome and the freedom of the city; be it

Resolved, That we, the members of the United States Veterinary Medical Association, recognizing these facts, and with a full appreciation of the same, extend to him a hearty vote of thanks. (Carried unanimously.)

Whereas, The thirty-third annual meeting of the United States Veterinary Medical Association in Buffalo has been so enjoyable and profitable as to mark the beginning of a new era in the history of our organization; and,

Whereas, This gratifying state of affairs has resulted largely from the efforts of the energetic and hospitable local committees; be it

Resolved, That this Association tender to the local committees and those who have assisted them a vote of thanks, to indicate its sincere appreciation of the reception it has been accorded in Buffalo, and recommends that the President appoint a committee to draw up suitable resolutions expressive of our appreciation, and that the same be engrossed in perma-

nent form and presented to the Chairman of the Local Committee of Arrangements, and that a copy of the same be spread upon the minutes of this meeting.

Resolved, That the United States Veterinary Medical Association, assembled in annual convention at Buffalo, N. Y., September 3, 1896, hereby respectfully and most earnestly protests against the passage, by the Congress of the United States, of Senate Bill No. 1552, improperly entitled "A Bill for the Further Prevention of Cruelty to Animals in the District of Columbia," or of any other bill designed like the said bill, to place restrictions upon scientific experiments upon living animals.

Resolved, That the said Association believes such legislation to be injurious to the progress of the biological sciences, and that where operative it will prevent the acquirement of medical knowledge essential for the prevention and cure of the diseases of animals and men, and desires to add its protest to the protests already made by the American Medical Association, the National Academy of Sciences, the Association of American Medical Colleges, the Association of American Physicians, the American Academy of Medicine, the Medical Society of the District of Columbia, the American Association for the Advancement of Science, the American Microscopical Society, and other medical and scientific societies of the United States.

Resolved, That the Secretary be directed to transmit a copy of these resolutions to the President of the Senate and the Speaker of the House of Representatives.

Resolved, That the United States Veterinary Medical Association appreciates the opportunity so courteously presented by the Pasteur Monument Committee of France to the American people of assisting in the erection of a suitable monument at Paris to the memory of the great investigator, and that the President is hereby authorized to appoint a committee to raise a fund, which shall be presented in the name of the Association.

Resolved, That this Association approves the action of the Master Horseshoers' Association in reference to the instruction of its members and their subordinates on such subjects as tend to perfect the art of horseshoeing, and thus avoid the great

and frequent losses that result from the imperfect shoeing of the horse's hoof; and this Association pledges its support to all properly directed measures designed to accomplish this object; and it is the sentiment of this Association that horse-shoers should be instructed in such subjects as pertain to the normal form and function of the foot and the mechanical processes necessary to preserve such conditions.

Whereas, Tuberculosis of some of our domestic animals, and especially of cattle, is a widespread and destructive disease; and,

Whereas, Statistics accumulated during the past year show that the disease is very prevalent throughout this country, especially in dairy herds, and indicate that it is steadily increasing, except in States where active measures for its suppression have been enforced; and,

Whereas, There exists in some quarters a difference of opinion as to the relation of tuberculosis among cattle to the public health, notwithstanding the fact that this matter has been the object of careful scientific inquiry by a great number of eminent scientists in all parts of the world, and that reliable and uniform results and observations are recorded in great numbers in the veterinary and medical literature; be it

Resolved, That it is the opinion of the United States Veterinary Medical Association that the following points have been demonstrated beyond dispute and may be accepted as fully established:

1. That tuberculosis of man and cattle are identical.
2. That the milk of cows with tuberculous udders may cause tuberculosis in animals fed upon it.
3. That the milk from cows with extensive tuberculosis but apparently healthy udders may in some cases contain the germs of tuberculosis and cause the disease in animals fed upon it.
4. That in some cases the germs of tuberculosis appear in the milk of tuberculous cows that are not far advanced in the disease, and that have udders that are healthy, so far as can be determined by an examination made during the life of the animal.
5. Slightly tuberculous cows sometimes succumb to a sudden exacerbation of tuberculosis and furnish virulent milk for a period before it is possible to discover their condition by means of a physical examination.

6. Tuberculin furnishes incomparably the best means of recognizing tuberculosis in the living animal.

7. Tuberculin, properly used for diagnostic purposes, is entirely harmless to healthy cattle, and is so exceedingly accurate in its effects that the few errors resulting from its use cannot affect the general results, and are of less frequent occurrence than follow the use of any other method of diagnosing internal diseases.

8. That the carcasses of tuberculous animals may be and sometimes are dangerous to the consumer, and all such carcasses should be subjected to rigid inspection by a competent veterinarian, and that those that are condemned should be disposed of in such a manner that it will be impossible to put them on the market for consumption as human food.

9. That the importance of dairy inspection cannot be overestimated, and municipal and health authorities should at once perfect a system commensurate with the vast importance of the subject.

Resolved, That the live-stock and especially the breeding interests of this country can never regain their former prosperity until such measures have been carried out by the National and State Governments as will afford some reasonable guarantee against the continued ravages of this disease. And in view of the prevalence of bovine tuberculosis in foreign countries, and the measures taken by some of them to protect their cattle from further infection, the United States should prohibit the importation of breeding animals until they have been proven by the tuberculin-test to be free from this disease.

CONTROL WORK.

California. Veterinarian Creely, of San Francisco, is doing valuable work as inspector for his city in arousing public opinion from its lethargy and demanding that legislation shall at once be inaugurated to afford their people greater safeguards from an impure and unwholesome milk- and meat-supply.

Oakland will have a milk ordinance that will be a great boon to her people. Veterinarian Pierce is conducting educational autopsies on tuberculin condemned animals, selecting those whose appearance would rather discourage the belief that they

were diseased. One herd revealed 50 sound ones in 120. Within four months 18 had died from tuberculosis. Another herd of 143, where 20 had died, the owner continued to make butter for the public markets without sterilizing the milk or cream. These two herds were on Grizzly Island.

"Peddlers of Poison" is the headline of the *News*, of San José, in speaking of dispensers of milk from tuberculous herds. Veterinarian Spencer reported 892 cattle examined; 225 condemned from March 20th to July 1, 1896. In July 421 tested; 150 reacted. A similar percentage throughout the counties would show 1675 diseased in a total of 8377 kept as recorded by assessors' books. Tuberculosis in California, from July, 1894, to July, 1895, stands at the head of the death-list; 1789 being recorded from this cause out of a total death-list in the State of 11,349. Due credit was given the veterinarian at a meeting in San José for enlightening the public on this all-important question.

Veterinarian Button is doing valuable missionary service through the public press of Riverside.

Veterinarian Pierce, of Oakland, besides officiating as milk-inspector, includes meat, market, and bakery inspection, treats all city horses, inspects all purchased, and also the hay purchased for the latter, and receives one hundred dollars per month for his services, out of which he must maintain a horse and carriage. Wake up, Californians! You have not as over-worked or ill-paid an officer in your whole county's list of public servants.

San José and Santa Clara Counties, through the proper authorities, are taking active steps toward supporting the inspectors against cows infected with tuberculosis.

Los Angeles, through Veterinarian Blackington, city meat- and milk-inspector, is active in the warfare against impure and unwholesome food-products.

Warfare against unqualified milk- and meat-inspectors is being waged in San Francisco. It is surely needed, and every veterinarian in San Francisco should hold up Dr. Creely's hands in this crusade against ignorance.

The State authorities are being urged by the cities to take hold of the suppression of tuberculosis, through the Board of Health of that commonwealth, particularly in the line of breaking up the nefarious traffic in condemned and other diseased animals, as well as the prevention of transferring herds of

animals condemned in one county to some other county, and the shipment of impure milk into the large cities. The *San Francisco Chronicle* demands the prosecution and punishment of those known to sell diseased meat in the city's markets, and calls upon the veterinary inspectors to lead the movement.

New Hampshire. The Board of Cattle Commissioners has issued General Order No. 3, viz.: 1. General Order dated January 11, 1892, and General Order dated January 19, 1892, are hereby repealed. 2. All persons and companies are hereby prohibited from bringing or driving neat cattle into the State of New Hampshire without a permit from the Board. 3. All neat cattle brought or driven into the State of New Hampshire under a permit from this Board are hereby placed in quarantine upon arrival in the State until identified and released. 4. Selectmen of towns and cities of New Hampshire are hereby authorized to seize and hold in quarantine any neat cattle coming into the State without a legal permit, and notify this Board at once of such action. 5. Permits to bring or drive neat cattle into New Hampshire will be issued only upon the result of the tuberculin-test to be applied and reported under such regulations and forms as will be furnished upon application to this Board. 6. This order is issued under authority of Chapter 113 of the Public Statutes of New Hampshire, and all violations will be vigorously prosecuted. 7. This order shall take effect on the fifteenth day of July, 1896.

One of the chief topics for consideration at the great Universalist meeting at Weirs was "Tuberculosis: the Stock-owner's Duty in its Prevention."

New Hampshire continues to work up every suspected centre, applies the tuberculin-test, and enforces better sanitary conditions under which their herds have been kept. The largest percentage of tuberculous animals are found in the southern part of the State, a section much used for grazing and feeding.

Vermont. The State Board of Health, working in conjunction with the Cattle Commissioners, are doing a great deal of educational and advisory work in controlling tuberculosis among their live-stock.

Connecticut. Danvers has had a lesson in the prevalence of tuberculosis among one of her prominent herds, and now joins in the general demand for protection from this danger.

From three to five hundred cattle are being examined weekly with tuberculin in the Nutmeg State.

Many of the largest milk-handling companies in this State are demanding of the producers certificates based upon the tuberculin-test as to the freedom of their herds from tuberculosis.

New York. The failure to make an appropriation to carry on the work of cattle inspection in the Empire State has practically halted this great commonwealth in the good work, and we are sure that the sharp criticisms at home and from contiguous States will awaken the lawmakers to a better sense of duty at the next session.

Pennsylvania. State Veterinarian Pearson finds much of his time occupied in doing missionary work among farming districts remote from cities, where the use and value of tuberculin are little known and the dangers of tuberculous cattle little appreciated. He should have the active aid of every individual veterinarian in this work.

A Farmers' Protective Association at Newtown, near Columbia, gives forth the statement that, inasmuch as the danger of transmission of the disease to the human family by means of milk has not been sustained, the municipal legislation against them is too severe in view of the fact that the State does not acknowledge the disease to be worthy of prohibitive legislation. A strong point here for future legislators, and how necessary missionary work still remains as a necessity.

Eleven out of sixteen high-priced cattle is the record of one herd in Montgomery County.

Three out of a herd of seventeen responded in Centre County.

Cumberland County finds tuberculosis among her cattle. New Brighton in Western Pennsylvania; Alverton, Westmoreland County.

The Philadelphia *Times* well says in its issue of August 5th: "The public health must be maintained even at the pecuniary loss of individual citizens, and the farmer should be just in his criticism of the State Veterinarian in the performance of his duty."

The Philadelphia *Press* in its issue of August 10th, referring to the formation of a Farmers' Protective Association to oppose the tuberculin-test, says such work is directly in the interests of the artificial dairies near the cities, where milk in greater quantities may be produced cheaper by stimulating foods cheaply obtained.

Huntingdon and Blair Counties are added to the list of those seeking inspections of cattle through the Live-stock Sanitary Board.

A public pasture lot at New Brighton, in the western part of the State, where some twenty-three cattle were pastured belonging to as many owners, has developed as another disease-centre.

Cerebro-spinal meningitis in enzoötic form is reported from a section of Chester County.

Ohio. Diphtheria is reported among the dogs at Cleveland, where it said to be causing serious loss among the kennels of valuable animals kept in that city.

Indiana. At Fort Wayne, a dairyman has sued the State Board of Health for two thousand dollars damages, basing his claim on the condemnation and killing of five cows afflicted with tuberculosis. He claims that a reputable physician and veterinarian on examination pronounced these animals in perfect condition and health. It will be interesting to watch the outcome of this case.

Michigan. A very fatal form of disease is reported among the sheep of St. Joseph County. It prevails as an enzoötic and is causing great losses.

Illinois. The Illinois Live-stock Commissioners, since July 23, 1894, have inspected and tagged 17,400 cattle; 12,642 cattle have been tagged with round tags, which allows them to be sold on the open market on their own merits; 4938 cattle have been tagged with square tags, which were held for post-mortem examination, as it was not certain on ante-mortem examination whether they were fit for human food. Out of the 4938 cattle held for post-mortem 1444 were passed that have sold at an average of \$5.50 per hundred, dressed weight. The Commissioners have caused 3494 cattle to be tanked and rendered unfit for food in the presence of a member of the Board, a director of the Live-stock Exchange, and a member of the City Board of Health. They have saved to the shipper and producer of live-stock by their system of inspection at least \$335,000, this being the amount over and above what the cattle shipped would have been sold for under the old regime, and have protected the consumer by destroying 3494 head of cattle that were badly diseased and which otherwise would have been eaten.

Missouri. St. Louis papers are decrying tuberculin as a diagnostic agent, because it did not prove a curative agent in human tuberculosis. Wake up, out there! Surely you do not want the East to think that the Western press has been sleeping the past five years and is ignorant of the advance of veterinary science in the direction of greater sanitary safeguards? Pull the scales off your eyes!

Oklahoma. The Board of Regents of the Agricultural College, the Governor, and the Territorial Veterinarians have decided that Texas fever exists in Oklahoma, and have ordered the Kiowa, Comanche, Wichita, Ponca, Otoe, Kaw, and Osage Indian reservations and the Counties of Cleveland, Pottawatomie, Canadian, Oklahoma, Lincoln, Payne, Logan, Noble, and Pawnee quarantined, and have prohibited the taking of cattle from these sections into other parts of the Territory under heavy penalty.

Dominion of Canada. The Dominion of Canada is now working under a Parliamentary act which is almost prohibitive in its requirements regulating the importation of horses. The certificates of no less than three veterinarians are required; one certifying to the health of the horse, another the public health of the district from which the animal was shipped, and the third the public health of the port of embarkation. The second certificate would be difficult to give, and might be of little value when given, for we have no sanitary police laws which keep the profession posted as to the existence of contagious or infectious disease among our live-stock.

A match race has been made between W. W. Hamilton, the bicyclist, and the horse "Joe Patchen," best two in three.

Veterinarian G. Howard Davis, of Millbrook, N. Y., has returned from England, and, in addition to some choice sheep, he has brought home fourteen goats, the milk of which he proposes to introduce into New York. The doctor believes that the freedom of these animals from tuberculosis will develop a good market for their milk among infants and invalids. Goats' milk is very rich and nutritious. Dr. Davis was a large exhibitor of Shropshire sheep at the New York State Fair.

SOCIETY PROCEEDINGS.

U. S. V. M. A.

THE thirty-third annual convention of the Association was called to order at 10.15 A.M., at the University of Buffalo, by President W. Horace Hoskins, of Philadelphia. He at once introduced acting Mayor Boeckel, who welcomed the delegates to the "Queen City of the Lakes," and bid them to partake of her hospitality. Recognizing the importance of the work of the profession and their interest in sanitary measures for the welfare of the whole of our people, he heartily wished for the convention the greatest good from their deliberations that could flow from the gathering together of so many strong representatives, and assured one and all of the interest which would be taken in our work.

Vice-President Osgood feelingly responded to the Mayor and thanked him for the warm and generous character of his welcome, and strongly referred to the second great question which every city must solve for its people, the securing a pure milk-supply, and of its growing importance under the present strong light thrown upon it by the veterinary profession.

The President then delivered his annual address,¹ which was listened to with marked attention, and which hastily reviewed many aspects of the work of the profession, paying a warm tribute to the colleges and the members of the profession and rejoicing in the great advances made by those of our number in the great and unlimited sanitary field. To those conducting this work he had words of praise, and to the Chief of the Bureau of Animal Industry he paid just tribute to the worth of his trying and arduous work.

The roll-call during the several sessions noted the following members present: James L. Robertson, C. P. Lyman, D. J. Dixon, F. H. Osgood, W. L. Williams, J. F. Winchester, M. E. Knowles, William Dougherty, A. W. Clement, Thomas F. Barron, E. B. Ackerman, R. P. Lyman, W. Horace Hoskins, S. Stewart, A. F. Peters, L. Pope, Jr., D. E. Salmon, M. Stalker, C. A. Cary, N. P. Hinkley, G. E. Gangloff, S. Somerville, Jr., John Wende, C. J. Wilganz, Joseph Hughes, Thomas B. Rayner, James B. Rayner, Leonard Pearson, John R. Hart, M. R. Trumbower, H. D. Gill, W. H. Pendry, Roscoe R. Bell, George H. Berns, J. M. Wright, W. H. Dalrymple, W. C. Rayen, L. H. Howard, J. Payne Lowe, James McDonough, James Robertson, Joseph Hawkins, E. A. A. Grange, M. H. Reynolds, H. J. S. Weicksel, Wm. Henry Kelly, H. Sutterby, F. L. Kilborne, Wm. Jakeman, Frank H. Miller, S. J. Thompson, W. J. Hinman, E. H. Shepard, T. B. Cotton, Wilson Huff, S. Brenton, John A. Bell, B. P. Wende, Robert W. Ellis, Louis A. Robinson, H. S. Wende, W. E. Wight, H. M. Manley, W. L. Baker, Claude D. Morris.

Honorary member present, Prof. D. McEachran, Montreal, Canada.

As delegates from Pennsylvania: Drs. James T. McAnulty, J. C. Foelker, N. Rectenwald. From the National Master Horseshoers' Association, J. C. McKenzie, Rochester, N. Y.

¹ Will appear in the October number.

Among the visitors were Prof. A. Smith, Toronto, Canada ; Prof. James Law, Ithaca, N. Y. ; Drs. T. A. Crandell, Jr., Buffalo, N. Y. ; M. W. Drake, Philadelphia ; W. W. Gibbs, St. Thomas, Ontario ; F. F. Hoffmann, Brookville, Pa. ; R. Perkins, Hardys, New York ; R. E. Collins, Memphis, Tenn. ; John T. Claris, Buffalo, N. Y. ; J. A. McCrank, C. J. Mulvey, Mark D. Williams, Middleport, N. Y. ; Anderson Crowforth, Lockport, N. Y. ; E. Rafter, Hamburg, N. Y. ; Chas. Elliott, St. Catharine's, Ontario ; Mr. Samuel N. Cook, of Business Men's League, Columbus, Ohio.

The *Comitia Minora* reported favorably upon the following list of applicants, and they were elected to membership on information from the Secretary that they had complied with the requirements :

Prof. James Law, M.R.C.V.S., Ithaca, N. Y. ; W. C. Rayen, D.V.S., Nashville, Tenn. ; Charles Higgins, D.V.S., Dover, Mass. ; E. P. Shaffter, V. S., Kansas City, Mo. ; H. Wellner, D.V.S., Providence, R. I. ; F. H. Miller, V.S., Burlington, Vt. ; F. W. Hopkins, D.V.S., Kansas City, Mo. ; A. S. Wheeler, V.M.D., New Orleans, La. ; W. H. Ridge, V.M.D., Trevese, Pa. ; W. H. Kelly, V.S., Albany, N. Y. ; S. J. Thompson, V.S., Winnipeg, Manitoba ; W. J. Hinman, V.S., Winnipeg, Manitoba ; T. B. Cotton, V.S., Mt. Vernon, O. ; S. B. Staples, D.V.S., Baton Rouge, La. ; E. H. Shepard, V.S., Cleveland, O. ; F. B. Tucker, D.V.S., Elizabeth, N. J. ; J. P. O'Leary, M.D.V., East Buffalo, N. Y. ; W. H. Gribble, D.V.S., Washington C. H., O. ; H. M. Manley, V.S., Miamisburg, O. ; H. S. Wende, V.S., Tonawanda, N. Y. ; W. E. Wight, V.S., Delaware, O. ; E. L. Quitman, M.D.C., Chicago, Ill.

The application of Alex. Crowforth, V.S., Lockport, N. Y., was refused. The application of G. W. Vernon, of Missouri, was withdrawn. C. A. Keene, Fitchburg, Mass., refused.

A number of resignations were accepted, the Secretary reporting that they had complied with all the requirements, and their dues were paid to date.

It was recommended and adopted to change the name *Comitia Minora* to Executive Committee.

The recommendation to allow the Executive Committee to fix the date of the annual meeting was not approved, owing to the confusion it would lead to in paying dues and arranging members' business to attend the meetings.

Owing to insufficient knowledge, the Executive Committee did not indorse the application for honorary membership of Veterinarian Desmond, Warnamboul, Australia.

The several amendments offered, to fix a definite allowance for veterinary colleges, to allow graduates of agricultural colleges, and to strike from the lists of recognized colleges those that made false statements in their catalogues, were not approved by the Executive Committee, whose action was sustained by the Association.

It was, on recommendation of the Executive Committee, approved that all reports and papers, where the chairmen or writers were absent, that said reports and papers go to the foot of the programme.

The resignation of Dr. S. K. Johnson, of New York City, was refused, pending action of the New York County Veterinary Medical Association, before whom charges of violation of the code of ethics were pending.

Protest filed by Dr. R. A. Archibald, who claimed to have been unfairly and unjustly discharged by the Bureau of Animal Industry, was examined into, and it was learned that his appointment was made for a probationary period of six months, and that at the expiration of this time, on the failure

of his superior officers to recommend his retention, he was discharged in accordance with the rules of the Department, and there was no cause for action upon the part of the Association.

The Army Legislative Committee made a report of its work and the progress made, the present favorable position of the bill, and its sure promise of success at the coming Congress. Their request for funds was well received and its concession left to the officers, who were empowered to so award if the treasury would permit. The old chairman, Dr. J. P. Turner, was continued by the newly elected President, with Dr. John R. Hart and Dr. Austin Peters added to complete the committee.

The Committee on Publication, through the chairman, Dr. W. L. Williams, made a very complete and satisfactory report, and in closing made a number of recommendations to the Association as to the best plans for control of the reports, papers, and proceedings, and to obtain reprints of the same for the members. The report exhibited the most earnest and thorough consideration at the hands of the committee, and, after some discussion and advice from those representing the several veterinary publications, it was, on motion, moved to refer the whole matter back to the Publication Committee with power to act. President-elect Osgood retained by announcement the old committee, with Dr. W. L. Williams as chairman, and Messrs. Hinkley and Stewart as his aids.

All the members of the Committee on Act of Incorporation being absent, the President announced that nothing had been done during the year owing to a depleted treasury and also to the fact of the disposition of the President to not look upon such acts with favor, having declined to approve a similar act proposed for the National Florists' Association. It was therefore deemed unwise to press the matter, owing to the fact that Congress exhibited a marked indifference to entering upon any new legislative enactments in view of the coming national election. This course carried with it the proposition to adopt a seal or emblem, as the latter could not be controlled unless we had a national act of incorporation.

The Finance Committee was not able to make a complete report at this time, owing to its inability to secure the full report of the last committee, and a large number of bills approved and unpaid, but was able to assure the Association of the better financial condition and the ability to discharge all past indebtedness and to have sufficient money to publish promptly the proceedings of this year, and to deliver the same to all the members at an early date; also that a full and complete report would appear in the *Transactions* of the Association.

State Secretaries Cary, of Alabama, R. P. Lyman, of Connecticut, W. H. Dalrymple, of Louisiana, S. Brenton, of Michigan, M. H. Reynolds, of Minnesota, W. L. Williams, of Montana, A. T. Peters, of Nebraska, J. P. Lowe, of New Jersey, Lemuel Pope, Jr., of New Hampshire, reported in person for their several States, and many reports were filed with the Secretary and referred to the Publication Committee. Dr. Lyman, of Connecticut, made special reference to the stamping out of bovine tuberculosis in the Nutmeg State and of the hearty co-operation of the farmers and dairymen. Dr. Lowe made special reference to the need of a strong single association in New Jersey and of better legislation needed. He reported much more active work by city and local boards of health, and that they were thoroughly alive to the good work being done elsewhere.

The Secretary's report was very brief and extremely modest in its review of the work done by that officer during the past year. As the work of the convention proceeded and the general standing of Association affairs became better known, it became more evident to all how efficiently and zealously Secretary Stewart had worked, and his unanimous recall to this post of duty was a well earned recognition of his fidelity to the Association's interests. President Osgood will have an efficient aid at his side during the coming year, and we are sure an equally favorable report will be forthcoming in 1897.

The President then called on Dr. H. D. Gill to present his paper on "The Relation of the Veterinarian and Veterinary Colleges to Master Horseshoers." This proved a topic of the greatest interest and provoked the widest variance of opinion. This paper was opened for discussion by Drs. James Robertson, of Chicago, J. C. McKenzie, of Rochester, N. Y., and Jaimes T. McNulty, of Philadelphia, representing the Committee on Science and Education of the National Master Horseshoers' Association. Each of them in turn voiced the appeal for assistance from the U. S. V. M. A. in well-directed remarks and earnest solicitude for the welfare of their craft, forcibly recalling the disadvantages under which they had long struggled and, thoroughly aroused to the needs of the day, they won the marked attention of all.

Dr. Joseph Hughes, having been appointed a speaker upon the subject, opened the subject for discussion and outlined his work in connection with instruction of shoers at Chicago. He believed that normal shoeing, preservation of the sound foot, anatomy, physiology of the foot, and locomotion should be taught; but the line should be drawn at pathological shoeing as the domain of the veterinarian. He was followed by Dr. Leonard Pearson, who dwelt upon some of the dangers in establishing schools of farriery, and how important it would be to do this work well if it was going to be of real value. Dr. Jos. Hawkins, of Detroit, condemned severely the methods pursued at Detroit in this direction and the results that had followed in that city, resulting in much clashing of the veterinary profession with members of the shoeing craft so schooled. Dr. Dixon, of Hoboken, N. J., was opposed to any recognition of the craft or the attempt of veterinarians to teach them. He did not consider it necessary for them to have a knowledge of anatomy, physiology, or locomotion, but said it was a matter of handicraft and could not be taught by veterinarians. Dr. McDonough, of Montclair, N. J., an old shoer, in a very humorous vein said that in a few years there would not be any of them capable of making a shoe, as almost all shoes were now machine-made. As for pathological shoes they had to be made, could not be bought, and it required skill of a high character to determine what was needed, then to make it and properly apply it.

(To be continued.)

MAINE VETERINARY MEDICAL ASSOCIATION.

THE semi-annual meeting was called to order by President Russell, and upon roll-call the following members answered to their names: Drs. Russell, Choate, Huntington, Freeman, Salley, Purcell, Stevens, and West, with Cain, of Norway, a visitor. Reading of minutes of preceding meeting postponed.

Dr. Purcell reported for the committee appointed to confer with the State Cattle Commission, and said the members were received and treated throughout with great courtesy, and they agreed to vouch for no more non-graduates as capable of testing cattle, and to restrict themselves to those already vouched for. Dr. Purcell exhibited a letter from Hon. F. O. Beale embodying the gist of the report. On motion the report was accepted.

On motion of Dr. West a memorial was forwarded to United States Senators Hale and Frye, asking them to do all in their power to defeat Senate Bill 1552, otherwise known as the antivivisection bill, which will come before the Senate at its next session. This question excited considerable discussion from Drs. Huntington, Purcell, Choate, and West, but was finally carried, and the Secretary was instructed to send the memorial.

The Secretary read a letter from G. H. Bailey tendering his resignation from the Association, and it was unanimously voted not to accept it.

Dr. Purcell called Dr. Choate to account for an alleged breach of ethics in trying to obtain practice by offering his services for lower prices than the others.

On motion of Dr. Purcell, the Association condemned any member who publicly endeavors to obtain practice by offering his services below the prices charged by any other member.

On motion of Dr. Salley, the Association voted to reconsider the schedule of prices, so that in future no member shall test cattle for less than one dollar per head.

Drs. Russell and Choate thought we should express our sentiments to the effect that the tuberculin test of cattle as applied by non-professional men is misleading and very liable to be misunderstood by the public.

On motion of Dr. Huntington the following resolutions were unanimously adopted:

Resolved, That the Maine Veterinary Medical Association respectfully protest that the testing of cattle for export to Massachusetts or for furnishing milk to our own citizens is a matter of such vital importance that it should only be done by competent and well-qualified men, and so far as it is being done by men of no professional training the results may be misleading and of no value.

Resolved, That if this important test cannot be made by professional men, there is no valid reason for its being made at all, as it entails an unwarranted expense upon the owner or shipper.

The Secretary was instructed to forward a copy of the above resolutions to the Maine and Massachusetts Secretaries of the Cattle Commissions, the President of the Maine Board of Health, and to all State newspapers.

On motion, it was voted that the following bill, presented to the Maine Legislature in 1893-94, be again presented at the coming meeting:

Be it enacted by the Senate and House of Representatives in Legislature assembled as follows:

Section 1. No person shall advertise or hold himself out as a veterinarian or veterinary surgeon unless he is a graduate of a veterinary college or school.

Sect. 2. Any person violating the provisions of the foregoing section shall be punished by a fine of not less than five dollars nor more than fifteen dollars, or by imprisonment not more than three months or both.

W. L. WEST, V.S.,
Secretary.

NEW HAMPSHIRE VETERINARY MEDICAL ASSOCIATION.

The eleventh meeting was held at Concord, July 14, 1896, with Dr. Lilico in the chair. Drs. Tuttle, Wilkinson, Lilico, Abbott, Macguire, Hart, and Pope responded to roll-call.

Dr. Wiggins's application was presented and laid over until the next meeting.

Dr. Lilico then addressed the Association regarding the subject of veterinary legislation.

After a long discussion it was voted that a committee be appointed to draw up a bill and present it at the next meeting. Said bill to be similar to those of other States having examining boards.

After a discussion on tuberculosis, the meeting adjourned until September 1st.

L. POPE, JR., M.D.V.,
Secretary.

ONEIDA COUNTY VETERINARY MEDICAL ASSOCIATION.

THE regular quarterly meeting was called to order in the parlors of Stanwix Hall, Rome, N. Y., at 1.30 P.M., August 4, 1896, by Dr. F. Morrow, President. The following members responded to roll-call: Drs. F. Morrow, Oneida; L. G. Moore, Trenton; H. W. Skerritt, Deansboro; R. C. Hurlburt, Boonville; Wilson Huff, Rome; and J. M. Currie, Rome. The minutes of the last meeting were read and approved.

Dr. H. W. Skerritt presented the names of Drs. H. D. Stebbins, West Winfield, and R. M. Weightman, Waterville, for membership. They were reported favorably upon by the Board of Censors and declared elected. The gentlemen being in waiting, they were then introduced.

After the regular routine of business came the reading of papers, etc.

Dr. R. C. Hurlburt read a very interesting paper on Equine Dentistry. In the discussion which followed, the travelling dentist was severely scored for making such rash promises to his clients and failing to fulfil the same. It was asserted that veterinarians as a class receive abuse which the travelling dentist alone should bear. This paper was fully discussed, and the writer was tendered a vote of thanks for his valuable contribution; after which a general and interesting talk took place on such subjects as "Tetanus and its Treatment with Gelsemium," "Iodine Treatment in Purpura Hemorrhagica," "Barium Chloride in Intestinal Difficulties." Other interesting items were presented.

Dr. Moore was appointed as essayist for the next meeting, to be held on the first Tuesday in November. There being no further business, the meeting then adjourned.

J. M. CURRIE, V.S.,
Secretary.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

THIS Association resumed its regular monthly winter meetings at the hall northwest corner of Broad and Filbert Streets, on Tuesday evening, September 8, 1896. President Hart in the chair. Secretary Rhoads marked

the members present. Report of progress was received from the Committee on Certificates, and that all suggestions had been harmoniously decided upon and the certificates would be ready for delivery at the October meeting.

After listening to the most gratifying reports from members Hart and Hoskins of the Convention at Buffalo, with a brief summary of programme and recital of the great hospitality enjoyed, it was with keen regret that many voiced their disappointment at not having been able to go.

A full winter's work was planned for, and the October meeting will be favored with a paper by Dr. W. Horace Hoskins on "Some Aspects of Association Work in the Future." The first paper in the series of half-hour talks, a plan inaugurated by the Association for the entertainment of the members during the coming season, will be by Dr. J. Cheston Morris, member of the Devon Cattle Club, on some thoughts and statistics in dairy-products, personal experiences in the proper preparation of milk for sale in the markets, and the value of separator products of milk.

A number of cases were reported, and an anatomical freak was reported by Dr. Hoskins in a male Angora cat, recently castrated and placed in his sanitarium for completion of recovery subsequent to operation. Subject about ten months old; local parts little disturbed by operation; animal extremely anæmic, with complete anorexia, during a period of two weeks eating nothing but a few spoonfuls of milk, refusing every other kind of food offered. The animal was listless, given to lying on the broad side a great deal, right side invariably; a fetid diarrhœa preceded death a short time, the animal dying two weeks after admittance. Diagnosis: Pernicious anæmia. Treatment: All kinds of food, milk, eggs, fish, meats (cooked and uncooked), tonics, pepsin, iron, and nux vomica. Autopsy: Heart in abnormal position resting against right thoracic wall; remnants of right lung only; left lung divided in five lobes, firmly attached to spinal column; each lobe divided in its entirety. Partially developed diaphragm. Large omentum, estimated to be increased in size one-half, very thick, and imbedded with small waxy-like deposits, somewhat resembling miliary tuberculosis; omentum extended to the thoracic cavity and appeared to aid in sustaining the heart in place of pleural folds of mediastinum. Liver displaced, and very much like a horse-chestnut in shape, very dark in color, and rough on exterior, situated almost entirely on right side of abdomen and resting against internal abdominal wall. All other organs very pale and waxy in color, but otherwise normal in appearance.

Delegates were appointed to the Pennsylvania State meeting at Reading on October 8, 1896.

W. L. RHOADS, D.V.S.,
Secretary.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

Report of Committee on Resolutions at the annual meeting in March:

We, your committee, have had placed before us the Army Bill as at present pending before Congress. We believe that this measure is a much-needed one, and we most heartily recommend that this Association indorse this measure, and urge upon its members the most earnest support to insure its passage.

Adopted.

WHEREAS, At the last session of the State Legislature said body created the Department of Agriculture, that the work falling in this line should be carried on more efficiently and effectively, and be it

Resolved, That we heartily concur in the creation of this department, because we believe much more valuable service can thus be rendered through well-established departments, with heads, where responsibility of the work may be better fixed, and where there may be hearty co-operation of the several lines of work now placed under the control of this department, and which are so closely allied as to lose much of their value when under widely scattered bureaus or boards.

Carried.

WHEREAS, A number of diseases afflict the domestic animals of this State that have never received the careful scientific study that is necessary to discover their causes and the methods to be employed in preventing and treating them, and especially so-called cerebro-spinal meningitis of horses, osteoporosis, abortion of cattle, the diseases of fowls, etc.

WHEREAS, Many of the questions involved in a study of these diseases can only be solved by co-operation between the practitioners who are brought in contact with them and an investigator who has superior facilities for research; and

WHEREAS, It is of great importance to the public and the live-stock industry of this State that the above-mentioned and other diseases should be carefully studied, be it

Resolved, That the State Live-stock Sanitary Board is hereby requested to direct the State Veterinarian to co-operate with veterinarians and others of this State who have had experience with these very imperfectly understood diseases, and arrange to conduct investigations with a view of discovering their causes and the means to be employed in preventing and curing of them; and be it further

Resolved, That a copy of these resolutions be forwarded to the President of the Live-stock Sanitary Board.

Carried.

WHEREAS, It has pleased Almighty God in His wise dispensation to remove from our midst our late member, DR. W. U. CUSTER, be it

Resolved, That while we bow humbly to His will, we feel keenly the loss that has fallen to our lot, for in our late member we had one devoted to his calling, an earnest member of this organization, and a man honored and respected by the whole community in which he resided; and further be it

Resolved, That a copy of these resolutions be spread upon the minutes of our Association, a copy sent to the family of the deceased and to the several veterinary journals.

Carried.

Respectfully submitted,

W. HORACE HOSKINS,
Chairman,

THOMAS B. RAYNER,

OTTO NOACK,

Committee.

F. S. Allen, "Acetanilide;" H. B. Felton, "Canine Distemper;" S. J. J. Harger, "Glanders;" John R. Hart, "Azoturea;" W. H. Hoskins, "Pyok-

tanin;" J. C. Michener, "Parturient Apoplexy;" Charles Williams, "Cannabis Indica;" Jacob Helmer, "Homœopathy *vs.* Regular Treatment in Veterinary Medicine;" James T. Ross, "Management of Cases of Parturient Apoplexy Homœopathically;" and M. E. Conard, "Abortion," will be the speakers on the topics named at the Pennsylvania State Veterinary Medical Association's semi-annual meeting at Reading on Tuesday, October 6, 1896. The following committees will report through their respective chairmen: Leonard Pearson, Sanitary Science and Police; John R. Hart, Legislative Committee; W. L. Zuill, Intelligence and Education.

AMONG THE COLLEGES.

ONTARIO VETERINARY COLLEGE.

THE opening lecture of the session of 1896-97 will occur on Wednesday, October 14th. No special changes are announced in connection with this school. The same corps of instructors will be maintained. During the period between sessions Prof. J. T. Duncan, of the faculty, has been abroad with a view of gaining a wider knowledge of the best methods of teaching extant. The school looks for a greater attendance this year than last, as its facilities for teaching were never so complete as at present.

DETROIT VETERINARY COLLEGE.

THE Veterinary Department of the Detroit College of Medicine will open its course on September 23d and continue for six months. The school still adheres to the two-year plan. The new buildings are expected to be ready for occupancy this year.

The resignations of Professors Brenton and McEachran necessitated changes in the course of instruction. J. D. Rutherford, M.D.V.S., will fill the chairs of anatomy, principles and practice of veterinary surgery, and obstetrics. M. L. High, M.D.V.S., graduate of the Ontario Veterinary College, Class of 1877, will fill the chair of materia medica and therapeutics. H. Rutherford, D.S., D.V.S., graduate of the Detroit Veterinary College, Class of 1895, has been appointed professor of principles and practice of veterinary medicine. But three veterinarians are noted on the faculty. They again announce an early adoption of a three-year course.

VETERINARY DEPARTMENT OF HARVARD UNIVERSITY.

OWING to the ill-health of Prof. C. P. Lyman, Prof. F. H. Osgood has been acting Dean during the past year. Harold C. Ernst, M.D., becomes full professor of bacteriology for the new year. Theobald Smith, Ph.D., M.D., will fill the chair of applied zoölogy, a subject of much importance to advanced veterinary education. Frederick A. Davis, M.D., instructor in physiology, retires, also A. H. Wentworth, M.D., assistant in chemistry. Langdon Frothingham, M.D.V., becomes assistant to the chair of path-

ology. Albert James Sheldon, D.V.S., instructor in meat-inspection, succeeds Alexander Burr, M.D.V., who retires.

Changes in the course of studies have been planned, and form and action, hygiene, histology, medical chemistry, and bacteriology have been added to the first-year studies. These changes are all in the line of keeping in advance of the needs of higher veterinary education, and exhibit a deep and confident interest in the great future of veterinary science in the wide field of sanitary medicine.

NEW YORK COLLEGE OF VETERINARY SURGEONS.

VERY many changes are noted in this school for the ensuing year. Willard A. Cobb, M.A., 1886, Lockport, N. Y., term expires on the Board of Regents; from the Board of Trustees C. E. Billington, M.D., retires, and is succeeded by William Anderson, V.S. Allen S. Heath, M.D.V.S., professor of breeding and management of horses and cattle, retires. August C. Hassloch, V.S., lecturer on materia medica and therapeutics, retires, and is succeeded by J. Mosedale, M.R.C.V.S., as instructor. Frederick T. Reyling, M.D., is succeeded by Alfred L. Beebe, Ph.B., as lecturer on bacteriology, and Ferdinand M. Jeffries, M.D., will fill the rôle of demonstrator in histology. The death of David Roberge, lecturer on horseshoeing, creates a vacancy which will be filled by P. Burns, V.S., as demonstrator. Thomas Giffen, M.R.C.V.S., has been added as lecturer on the external form of the horse and examination for soundness. Edwin Parsons, D.V.S., will be demonstrator in equine dentistry. Louis P. Cook, D.V.S., will assist the chair of anatomy. Joseph N. B. Rawle, M.D.V.S., will lecture on veterinary jurisprudence. George F. Horpel, V.S., has been added as assistant to the chair of clinical medicine. Edward N. Leavy, D.V.S., will lecture on zoötechnics. Samuel Goldstein will lecture on diseases of the throat and nose, a new departure in veterinary medicine. Joseph Thackaberry, V.S., succeeds M. O'M. Knott, V.S., as assistant demonstrator of anatomy. Rudolph J. Schrieber, Ph.G., V.S., retires as assistant in botany.

The demands for higher and broader work in New York State seem to be fully realized by the schools, and every effort to attain the most thorough work is entered upon with such zeal and determined action that every friend of a better education for the veterinarian must feel happy and proud of the results in store for those who are to follow in our footsteps. Such evidences of good intention merit from one and all the strongest support and the kindly hand of assistance at all times.

VETERINARY DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA.

CHANGES in the Board of Regents bring this year to the support of the university system of this State W. T. Jetard, Lieutenant-Governor, in place of Spencer G. Millard. Ernest A. Denicke succeeds A. S. Hallidie; Columbus Bartlett and George J. Ainsworth succeed J. B. Reinstein and John E. Budd. F. F. Knorp has been added as assistant professor of physiology and histology, and D. F. Reeves as assistant professor of chemistry. K. O. Steers, V.S., succeeds A. A. Cunningham, F.C.S., as secretary.

GLEANINGS.

An outbreak of an anasaruous character, involving the thoracic cavity very largely, is reported among the sheep of a district in Australia.

The *Live Stock Journal* reports four deaths among horses from swallowing excessive quantities of sand with drinking-water, especially when allowed to drink from shallow ponds. In one instance, on autopsy, fourteen pounds of sand were found in the digestive tract.

The control of fleas and other parasites has given little trouble at the Philadelphia Veterinary Sanitarium during the warm weather. The cats and dogs have been given creolin baths occasionally, and crude sanitas disinfecting fluid has been used on the walls and floors, and the kennels have been thoroughly washed with hot water freely charged with sanitas.

The *Holstein Friesian Register* quotes Professor King, of the Wisconsin Experiment Station, as authority for the statement that fourteen hundred cubic feet of air per hour should move into and out of the stables for each cow. Outlet shafts of one foot square, inside measure, are requisite for every ten cows. Outlet shafts should start near the floor and be carried well above the roof of the barn.

Calcium chloride will be well worth a trial in those cases of skin diseases of dogs where the itching and irritation of the skin is so intense and pronounced. Give in water in from one- to ten-grain doses after feeding until the blood is well charged with the remedy.

The fluidextract of gelsemium, with Norwood's tincture of veratrum viride, secured a favorable result after sixteen days' treatment in a case of tetanus in a boy suffering from a wound of the foot from broken glass. The case is reported in the *Medical News* of July 18, 1896.

A preparation of formalin-gelatin as an antiseptic powder for wounds and in operative surgery has recently been introduced under the name of glutol. It is odorless, and is claimed to be absolutely non-irritant and non-poisonous. In open wounds it

limits the formation of pus and aids the elimination of dead tissue. In moist wounds its absorbent qualities are said to be very marked, and in experimental abdominal surgery it has demonstrated some remarkable properties which promise to make it an invaluable preparation in this sphere of work. Veterinarian George Rodewald, of Germany, quotes a rapid healing of a suppurative abdominal wound in a fox-terrier. The wound was cleansed daily with a lysol solution and dusted with glutol. It is also claimed by Veterinarian Jess, of Charlottenburg, to allay the itching in wounds of dogs which so often proves a great barrier to healing. The same writer reports a case of broken knees in a colt rapidly healing after cleansing with creolin solution and dusting with glutol, without the application of bandages.

William Watson, who has been writing a series of articles on abortion, has finally arrived at the conclusion that it may be infectious, but disclaims its contagious character. He is now convinced that matter discharged from the genitals may convey the disease to other animals, or it may be conveyed by the hands or instruments of attendants.

One of the most common ailments of pet house-cats is the formation of hair-balls along the intestinal tract, causing the most obstinate torpidity of the bowels. It is largely the result of overfeeding, which produces a dry condition of the hair, which enters the mouth and stomach when the animal washes itself. Its dry condition facilitates its impeding the natural movements of the bowels. A cat recently treated in the Philadelphia Veterinary Sanitarium, in which the obstruction could be felt by external manipulation, continued to refuse food for ten days. Repeated doses of castor-oil and the introduction of gluten suppositories finally brought away five large masses which were made up almost entirely of matted hair.

The *Breeders' Gazette*, in a recent number, invites its readers and others to a discussion of the legal points involved in the sale of an animal guaranteed to be a breeder, and which has proved to be only a potent sire or dam in occasional instances.

The average yearly consumption of whole milk per inhabitant of the United States is said to be twenty-five and one-half gallons, and of butter nearly twenty pounds. Does anyone presume to say that these consumers have no right to ask that

these products shall come from healthy animals and that these foods shall be gathered and disposed of to the consumers under the most rigid care as to cleanliness and purity?

FROM MANY SOURCES.

Polishing and coloring horns and hoofs of animals intended for show purposes is one of the latest fads.

A Wyoming County (N. Y.) cow has just been relieved of a butcher-knife which was extracted through the thoracic walls. The knife accidentally fell in the food a year ago, since which time it has been gradually working its way out.

J. L. Bradley, of Indianapolis, Ind., who owns the horse Thomas A. Scott, and has an extensive breeding farm near Edinburg, Ind., recently met with a severe loss. During an electric and rain storm lightning struck a bunch of brood-mares and youngsters at the farm, killing sixteen head.

In Colorado there are ruins five hundred years old on which there are rude sculptures of horses.

The muscles of the mocking-bird's larynx are larger in proportion to the size of the bird than those of any other creature.

In Australia horses and cattle are now being branded by electricity from storage batteries. The temperature is uniform and the brand safe and artistic.

Wild horses have increased to such an extent in Queensland that they are being shot with a view to reducing the number.

An Illinois Poland China boar pig has just changed hands at \$1000.

The auditorium at St. Louis, where politics recently reigned supreme, will be converted into a sort of Madison Square Garden, for horse-shows, dog-shows, etc.

The New York City Board of Health, as a part of the municipal government, has recently had a verdict rendered against it for \$1537.50 in favor of a livery-stable keeper, for five horses condemned and killed for glanders without being appraised by law as required.

PERSONAL.

Dr. H. A. Meisner, of Baltimore, Md., recently officiated as associate judge at the Herring Run Track.

H. B. Adair, of Kansas City, Mo., has successfully passed the civil-service examination, and is on the eligible list for appointment to an inspectorship in the Bureau of Animal Industry.

F. W. O'Brien, V.S., of Hannibal, Mo., entered the civil-service examination for inspectorship in the Bureau of Animal Industry, and has been placed on the eligible list for appointment.

Dr. T. J. Turner has lost none of his interest in Association work, and as President of the Missouri State Veterinary Medical Association has been doing yeoman service in the way of strengthening that organization.

Governor Hastings, of Pennsylvania, has appointed to free scholarships at the Veterinary Department of the University of Pennsylvania Edward Black, of Philadelphia, and John P. Miller, of Lebanon.

Dr. R. S. Huidekoper still remains in the White Mountains, where he is endeavoring to regain his impaired health.

Dr. W. H. Park, assistant bacteriologist of the Health Department of New York City, has been a victim of typhoid fever, contracted while experimenting with toxin intended to be injected in the horse, in the hope of producing an antitoxin for this disease.

Veterinarian Richards, of Emporia, Kan., is an admirer and breeder of English fox-terriers.

Veterinarian J. Greer, of Ormstown, Quebec, has located at Colorado Springs, Colorado.

Veterinarian S. J. Thompson, of Manitoba, holds a governmental place for his people.

Dr. Austin Peters officiated as veterinarian to the Bay State Agricultural Society, whose annual exhibition was held at Worcester, Mass., September 1st to 4th, inclusive.

Dr. William J. Coates, of the American Veterinary College, while alighting from a Lexington Avenue cable-car at 116th Street, New York City, accidentally fell and broke his right arm.

Dr. M. J. Dair during the summer season has been practising at Far Rockaway, L. I.

A well-known and prominent Eastern veterinarian will be among the "Benedicts" next month. Our congratulations later.

Veterinarian H. R. Macaulay, of Indianapolis, has gone to Montreal to study human medicine.

Veterinarian Mull, of Woodburn Farm, Ky., met with a painful accident recently by being thrown from his sulky.

Dr. M. E. Knowles, late of Riverside, Montana, has returned to his old home at Terre Haute, Ind.

Veterinarian Pearson, of Pennsylvania, was a visitor to the Wernersville Sanitarium for a few days in search of rest and recuperation from a severe attack of digestive trouble incidental to the very hot weather.

Dr. Thomas B. Rayner, of Chestnut Hill, Philadelphia, has been suffering from a severe attack of rheumatism of the lower limbs.

NEW INVENTIONS.

A horseshoe with mortised recesses for toe and heel calkings secured by lugs.

A soft-tread horseshoe, consisting of a shoe deeply grooved on the solar face next the inner border, to receive an elastic or yielding packing, with a similar pad between the heels, supported in rabbets formed in the upper face of the shoe.

A sectional horseshoe jointed at the toe, with a toe-calk fastened to each section.

A kicking-strap, secured in front to bit passing over the poll, then to the saddle through loops and through similar loops on each side fastened to the crupper, from whence they are carried to the shaft-bar and secured.

A horseshoe calk, wedge-shaped, fitted to a socket provided with a longitudinal channel to receive said calking; the socket provided with flanges to enable its welding to the ordinary shoe.

A wheel-tire, comprising an exterior casing of suitable flexible material and a compressed filling of felt.

A horseshoe calk-extractor.

A device for holding horses, consisting of a spiral lineholder-rod encircling the hub of a wheel.

A hame-fastener, consisting of a solid portion with loop extremity and a pointed section opening by a spring.

A harness-buckler and trace attachments.

A check-bit, consisting of straight mouthpieces ending in rings for adjusting straps, the mouthpieces having parallel extensions or side-bars connected in front by a curved piece, the mouthpiece of a continuous wire rod.

A harness-saddle, with adjustable back-pads pivoted thereto.

A detachable calk for horseshoes to prevent slipping, consisting of a toe-calk plate connected with projections from the rings of the shoe and regulated by a screw adjusted to said levers.

A collapsible top for vehicles.

A bottle-stopping device for sterilizing purposes, having a rubber cap, with a cap inside the neck, allowing the gas to escape during the sterilizing period.

A bottle-labelling machine.

A nose-bag, arranged to be held in position by sheaves at sides of bag fastened over the head and regulated by draw-strings carried backward and fastened to the collar.

An elastic-tread horseshoe, composed of recessed metal frame with apertures, a continuous rubber cushion in said recess connecting with a rubber cushion on the back through the apertures, this cushion resting between the metal frame and hoof.

A wagon-pole feedbox, made in halves, hinged together and secured by a depending clip.

A horseshoe, composed of two sections, a plate having slots for the reception of the lugs on the outer shoe, thereby forming a dovetail, and a pin or bolt serving to expand the outer shoe and lock the same.

A combined, halter and blind, made from a piece of sheet-metal, and attached to the head-stall and sidestraps of the halter.

A vehicle-shaft, the front end of each ending in a terminal loop for the attachment thereto of the back-band, the loop being provided with a cross-stay for the attachment of the trace.

A harness-pad, having a backing of soft, absorbent material of felt and a lining of haircloth, the latter with its smooth side next to the animal's skin.

A horse-starting device, consisting of a screen adjusted with ropes or cables, carried to supports at opposite sides of the track, with a take-up device.

A trace-fastener, consisting of a body-portion with a jaw pivotally supported from the body, with a wire spring in jaw-portion.

A horseshoe with detachable calks, the calks having T-ends for securing to the shoes.

A hitching device, to be secured at one end to the horse, the other to a wheel, with a clamping lever device, with a stop adjustment to lock the wheel subsequently to stopping the horse.

A rubber-cushioned horseshoe, the rubber having long wires or fibres woven through it, the frame of the shoe having lugs to extend into the rubber and wire-netting, and the whole vulcanized.

An automatic feeding-box, with a hinged bottom, with a pivoted lever at one end and a roller-sustaining bottom at other end, with time gearing attachment and weight.

A suitably flanged, jointed, marsh horseshoe.

A breaking-rig, consisting of a surcingle with a fixed guide pendant therefrom, and a series of limiting-straps, with suitable attachments for securing to the fore and hind limbs.

A stand for shoeing horses.

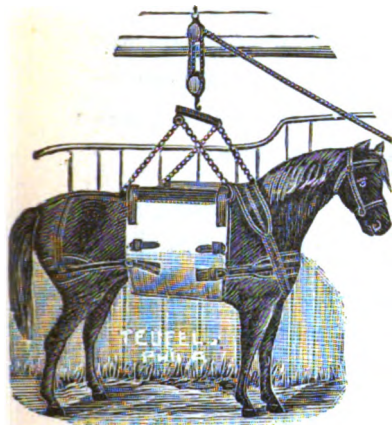
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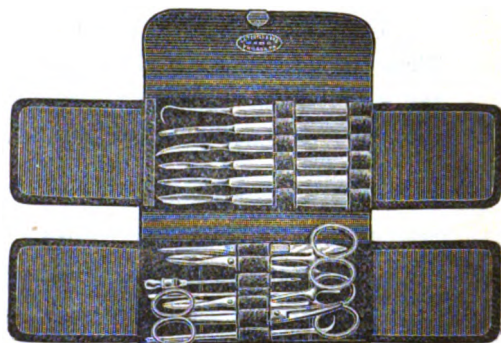
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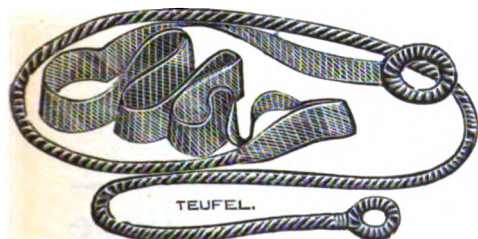
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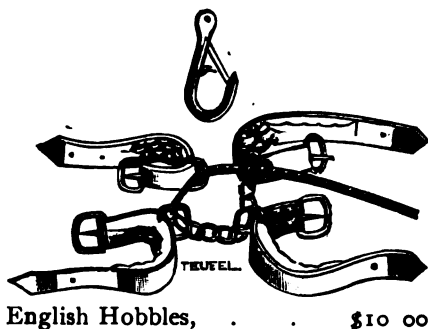
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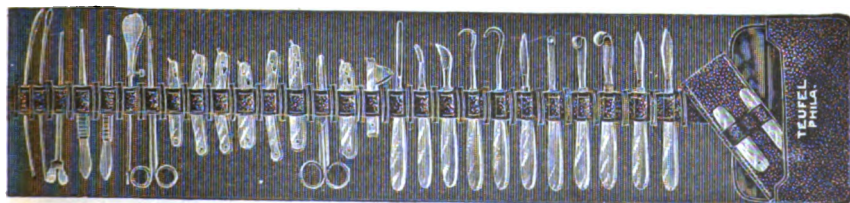
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SOCIAL POSITION OF THE VETERINARIAN.¹

BY J. W. SALLADE, V.S.,
POTTSVILLE, PA.

THE veterinarian, being a professional man, rightfully belongs to the more cultivated portion of a community. He should, as a learned man, command a high social as well as a useful position; and it may not be egotism to claim for him a distinctively lofty position in all that relates to the social improvement of the community. In social science, education, health, and the arts, it is his function to participate in all discussions calculated to advance the interests of society. In order to creditably occupy this lofty position in society it is essential that the veterinarian be a man of high character, education, and energy, and possess a ceaseless determination to elevate himself, and thereby his profession, in the estimation of the community, and thus place himself on the top round in the social swim. He should keep well posted at all times in matters of national, State, and local politics; so also as regards other subjects likely to affect the welfare, interests, and credit of the community. He ought to be a walking encyclopædia, ever ready to express himself intelligently, no matter what the topic of conversation may be.

The young veterinarian, if possessed of a proper preliminary education and a thorough college training, will not find it difficult, at this late day, to enter upon the full discharge of his social as well as his professional obligations. Times in America

¹ Read at the semi-annual meeting of the Schuylkill Valley Veterinary Medical Association, Reading, September 7, 1896.

conflagration can be quenched in the beginning; and the truth of the old adage of the value of the ounce of prevention has increased in modern times to double that of 16 to 1.

On the other hand, there has been discovered the protective action of some diseases of animals on the human system, the one most favorably known being vaccinia against smallpox, and the antidiphtheritic serum prepared from horses' blood. The question of how these act is one of the most interesting problems of modern science, and is taxing the minds of the best thinkers to explain. This is no place to go into differences of their opinions, for as yet they are not absolutely settled. But it is simply instanced to show what interesting problems will be presented in the course of your studies, and in the answering of which animals alone can be used.

With this decade has come the general acceptance of the bacterial origin of disease, and antiseptic, or more properly aseptic, surgery has completely revolutionized this line of treatment. Now abscesses and septic processes following upon surgical interference are not looked upon as accidents, but as due to criminal neglect on the part of the operator, from the imperfect sterilization of his instruments and person. It is true that animals are not as susceptible as man to some of the common pus-producing organisms, and so blunders on the part of the operator are not punished quite so severely by nature as in human practice, but still there are a great many to which they quickly react. And the lack of cleanliness and aseptic precautions is as much to be reprehended in the veterinary surgeon as in any other class of practitioners. Your motto should be that you cannot wash your hands too often; and although we all know that cleanliness costs money, still it is the cheapest investment that a medical man can make. The simple laboratory experiment of the difference in the number of colonies of bacteria of a culture taken before and after sterilizing the hands is one of the best object lessons in this regard that anyone can have.

You see that the study upon which you have entered is a most liberalizing one; for it not only gives a scope to the highest faculties of the mind, but also arouses the best and noblest human qualities, viz., courage and unselfishness. To those who prefer the life of the student it offers opportunities for life-long work, not accompanied, perhaps, by the pecuniary emolument that will fall to the lot of those to whom the active and applied side of the profession is more alluring. It is well for the pro-

fession that both classes of men exist, for it is the latter that tests the work of the former, and only that which is of real intrinsic worth can survive his touch.

In one branch of the profession alone must you be prepared for disappointment, and that is in the knowledge it gives of *curing* a disease when once it has obtained a foothold. You will learn much of the way in which to alleviate suffering and aid nature in eliminating waste material. But in most cases you will practically have to stand aside and watch the disease run its course, helping judiciously where you can, and consoling yourself with the thought that it is the wisest physician who does the least harm by his treatment.

I would not for a moment, however, not have you learn all that you can on the subject of therapeutics, and apply it as faithfully as possible. But when you find that a favorable result follows the administration of a drug, be careful to prove that it can be due to this one alone, and would not have taken place just the same if the patient had been untreated, or another had been used. An honest, scientific skepticism should be the constant accompaniment of the interpretation of your results. I do not say but that the future has a great deal in store for us in this regard, and I trust it may be the good fortune of some of you to find it out; but the history of medicine thus far teaches that our knowledge of the diagnosis and prevention of disease far surpasses that of its treatment. There are signs in the air, but these point rather to the antagonistic action of the products of living (bacterial) action than that of inorganic or vegetable substances. You are to be congratulated upon the opportunity which many of you will have to see a great deal of what is doubt now settled one way or the other. It cannot for a moment be supposed but that there are as great discoveries reserved for the future as the past, and that other causes of disease besides the bacteria may be isolated. If some experiments on rabies, which have recently been conducted in the laboratory of the Cattle Commission, are confirmed, they will show the presence of a purely chemical ferment capable of producing that disease after a long period of apparent inactivity.

To you, gentlemen, who are just entering, it will be well to give a brief outline of the course you are to pursue. It is progressively graded, beginning with the fundamental studies of anatomy, physiology, chemistry, and botany, then through pathology, medical chemistry, theory and practice of medicine

and surgery, into their practical application of diagnosis, prognosis, and treatment in the clinical departments.

With those of the first year you are naturally the most interested. And here let me impress upon you how important they are, since they form the groundwork of all your subsequent studies. You may have heard from others that they are dry and uninteresting, and that they are not practical. Do not believe it for an instant. There should not be a dull or stupid moment in them. They are the keynote to the whole, and it is the thorough mastery of these that will give you a command in your profession, and which at once raises the scientific above the empirical practitioner. Do not go at your studies as if they were only to be gotten through for some one else's benefit. You must realize that with your entrance into the professional school you have left behind you the lessons that are to be learned for a taskmaster, and that the subjects are to be studied for their own sake and what is in them. And that failure to master them is only your own loss, and any deception by which the worse is made to appear the better reason only recoils upon you. Look for the beautiful in all you do, and even let the odors of the dissecting-room be forgotten in the interest aroused by unravelling the intricate arrangements of the muscles you are laying bare. Remember the Eastern sage who found beauty in the ear of the mangled cur lying in the street.

Another point which may appear an elementary one, but to which you should pay the strictest attention, is the use of the English language. Commence at once to take notes of your work, and in them try to express yourself clearly. Language was not given to conceal, but to express our thoughts, and many men of good ideas are handicapped through life by the inability to convey them clearly to others. We have no right to ask others to read what we present to them in an illogical and ill-digested way. Anyone of you may be fortunate enough to discover something of value to the world, and you should always have a vehicle at your command by which it can be carried to the most distant parts of the earth. And that is a proper mastery both in writing and speaking of your own tongue. The ignorance upon this subject has been forced upon me year after year in reading the examination-books, which of course are written hurriedly, but still, with all allowance, the crudeness of expression is really appalling. It is with this in view that quiz classes and written conferences by the students are of great

value. Life is one long quiz, and the sooner you become prepared to answer questions, the easier it will be to reply to those that will be showered upon you the moment you commence the battle of life. And the school is the place where you can prepare for this, without exposing yourself to ridicule. Never be afraid to acknowledge your ignorance, and do not allow that you understand a point or subject until you really do. The instructor may be at fault in his presentation of it, and therein lies the great advantage of many teachers going over the same ground from different points of view, from some one of which it will probably become clear to you.

A faculty which you should begin to cultivate at once is that of observation, for it is upon this more than anything else that your success depends. Your patients cannot express their feelings in words, and so cannot aid you in locating their pains, and thus help you in your diagnosis. You must learn all of this from observation of them. But it is not alone to this that it is applicable; through your whole course seeing for yourself is what you are expected to do, and one fact properly brought to light from its entangling surroundings by yourself is worth fifty that are pointed out to you by someone else. Progress would be at a standstill if nothing new was discovered. And discovery means the observation of something that has hitherto been overlooked.

The trite remark that "I never saw that before," as a picturesque bit of landscape is pointed out to us by an artist friend in our daily walk, shows us that we all have eyes but see not, and will convey to you what I mean by cultivating observation. But it is not only seeing, but applying what is seen, that gives the highest class of minds; and when the application is in new and untrodden paths, then come those flashes of genius that illuminate the world. Now, although we cannot all hope to attain to this plane, still the cultivation of observation and the application of it are the stepping-stone, and if we have the right combination in ourselves the highest prizes are within our reach.

To those who are about to leave the school much that has been said is already well known perhaps, but still we are none the less students after our degrees have been received than before. The only difference is, that the problems which are presented to us are of all sorts and degrees of complexity, and not arranged in the graded way of the regular curriculum. Let the same high aim be present in your work by yourself as when

you were in the class with others. Do not degenerate into a routine practitioner, who sees nothing in his profession but a means of earning a livelihood. While I would not for a moment wish to depreciate the value of your services, and that they should not receive a due pecuniary reward, still there is something else which will bring you more true happiness and mental pleasure. Be on the lookout for something new all the time, and try to contribute something to the advancement of your profession, in return for the accumulated knowledge of your predecessors which has been so freely given to you. But while urging you to do this, I wish to warn you against rushing too quickly into print with premature conclusions. Put your discoveries away for a time, and after a little, if they still shine with equal lustre under the touchstone of your subsequent experience, they can be given to the world. Begin at once to keep records of your cases taken on the spot and do not trust to your memory; for the impression quickly fades under the rapid succession of new facts, and it is difficult to find time later to jot down what are even the striking features of a case. A few words written at the time are worth more for future use than reams done later from memory. In this way you will soon have a fund of information of your own accumulation, to which you will refer with ever-increasing interest and profit.

You can also help the profession by aiding the school, for besides the instruction there is another side to the school and hospital—viz., that of investigation. And this it is impossible for the practitioner to carry on alone; it requires a laboratory and other equipments which are out of the reach of the individual. They will only too gladly be placed at the disposal of any of you who have the inclination and the fitness for that peculiar kind of work. So let your influence be exerted wherever it can to induce students to come or friends to contribute to the institution, which has for its final aim the alleviation of suffering and advancement of knowledge. And it is in this spirit that the alumni association should be fostered, not in any clannish or narrow one, but with a view to keeping up your old friendships and sympathy for your alma mater, bringing to her as a repository all that is new and best, either in knowledge or means, from year to year.

In closing, let me ask you always to bear in mind that it is the men who give the dignity to the profession, and not the

profession to the men, and to so bear yourselves in your relation to your clients that it will always be considered an honor to be enrolled in the profession of which you are members. Never let a taint of charlatanism or chicanery be associated with your practice, and let all you do be of such a character that full light can be turned on it at any time. And bear always in mind what has so well been said by the immortal student of human nature :

" To thine own self be true,
And it must follow as the night the day
Thou canst not be false to any man."

HOMŒOPATHY IN VETERINARY PRACTICE. WHY I DO NOT PRACTISE IT.¹

BY JACOB HELMER, D.V.S.,
SCRANTON, PA.

SYSTEMS of healing, like those of religion, attract their following by virtues, real or imaginary. Attracted by superior virtue, intelligent and honest men have forsaken one form of religious belief for another, or have abandoned a mode of healing which circumscribed their ability and skill. This is right. It shows a spirit of progression. Investigation is the mother of progress.

Articles tending to show the advantages of homœopathy over the regular treatment in medicine, and the reports of success with remedies applied according to this system, have appeared in our journals as evidence of a progressive tendency on the part of the writer. But the experiences reported have to the extent of their influence tended to array homœopathy against the regular practice; that this was not the motive is evident from the diffidence as well as the acknowledgment of limited experience in this mode of healing. Charlatans have, however, thus arrayed the two systems, and, by dint of assertion and persuasion, have crowded themselves upon the field of veterinary medicine with the object of selling their wares. Compilations of veterinary homœopathic materia medica have

¹ Read before the Pennsylvania State Veterinary Medical Association, Reading, Pa., October 6, 1896.

been issued ostensibly with the same purpose of advertising and selling their wares. Translations of foreign homœopathic veterinary works are offered. Under the laws of competition such things are natural. It is called business. But we are the representatives of science in our field. By means of recorded observation we build the substantial edifice of veterinary science. We would not remove a stone from this edifice if we could not replace it with a better one. The question is, Can we to any extent reconstruct this edifice on the principles of homœopathy? My note-book discloses that during a period of two years we treated diseases with the homœopathic and regular methods in order to form an idea of their comparative value. By comparison we see quickly the perfections and imperfections of the things compared.

History shows that the *regular* or *rational* school of medicine has been a development unhampered by any restricted tenets. Its foundation-stones are reason, experiment, and experience. Its *aim* has been *truth*. It accepts truth from any quarter. Recognizing disease as an entity, it has developed the sciences that include the phenomena of causes, viz., anatomy, physiology, biology, pathology, morbid anatomy, and bacteriology. Operating in sympathy with nature's laws, it seeks to remove causes. It does not claim to cure disease, but recognizes the healing power of nature. It uses every reasonable means to accomplish results. It stands ready to reject the ideas and methods of yesterday if it can substitute better ones to-day. It is progressive. It is not an exclusive system. It has not discovered any universal law of therapeutics. It does not claim to have found any law in nature either of similars or opposites according to which drugs exclusively influence the animal organism. It has witnessed the birth and death of exclusive systems. It needs not to go outside of itself, in direct disobedience to the principles of any founder, and appropriate the good of all in order to save its very life. It does not owe its success to credulity and superstition. It has been the most successful. It has not been driven by time and discovery to the humiliating spectacle of modifying and eliminating itself until scarcely anything remains but its flag.

On the threshold of experience with any method of treatment we must first learn its principles, conform to its rules, and accept the conditions it imposes upon us. The work announcing and elucidating the principles of homœopathy was published

by its founder, Samuel Hahnemann, in 1810. He named it *The Organon of the Healing Art*.

On page 103 of the *Organon* he says: 1. *Similia similibus curantur* (likes are cured by likes) is the only therapeutic law; "that is to say, the only salutary treatment is that method according to which a disease is combated by a medicine capable of creating in the healthy body symptoms most similar to those of the disease." 2. The totality of the symptoms is the only guide to the physician in the administration of remedies; "that is to say, every drug before it may be properly employed in treating disease must first have been administered to a person in health, and the symptoms produced thereby recorded in order that their similarity or dissimilarity may be compared with those from which a patient may be suffering for whose relief a drug is sought to be administered." "All that the physician may regard as curable in disease consists entirely in the complaints of the patient and the morbid changes in his health perceptible to the senses." 3. The only true method enabling the physician to select the proper remedies in disease is to prove them upon a person in health.

To be consistent with these principles and to obey this therapeutic law we must experiment upon the various classes of the lower animals to find what drugs will produce symptoms similar to the symptoms of disease we desire to cure. But has this been done for veterinary homœopathy (if I may be permitted to use the expression)? Some authors on veterinary materia medica are silent on this point. Another speaks of careful provings having been made, but we have seen no record. But we know that animals have been utilized by the regular school as well as the homœopathic to demonstrate the toxic power of remedies to be used in the treatment of human diseases.

But admitting for the sake of argument that careful provings have been made upon different species of the lower animals, the results obtained are meagre, since only the objective symptoms produced by the drug can be noted. But some of the objective symptoms thus noted are unreliable, especially such as relate to the disposition and movement of the animal. Here it requires the discrimination of the prover to determine whether this class of objective phenomena are the primary result of the drug or are secondary to some influence produced by the drug.

Hence the symptoms which may be considered reliable, obtained by proving drugs upon the lower animals, are those

indicated by the pulse, pupil, conjunctiva, the visible mucous membranes, the skin, and the excrements of the body. But the therapeutic laws of Hahnemann demand all possible symptoms obtainable from the action of a drug on every organ and tissue of the body. The subjective symptoms are therefore indispensable in a system in which symptoms are everything and morbid conditions and causes are nothing. "They fancied," says Hahnemann, "they could find the cause of disease, but they did not find it because it is unrecognizable and not to be found, since by far the greater number of diseases are of a dynamic (spirit like) origin and nature; their cause therefore remaining unrecognizable."

Observe that in the second part of the law quoted from the *Organon* it declares that the totality of the symptoms is the only guide to the physician in the administration of remedies. To meet this ever-varying totality of symptoms, and to find their correspondences, it has been found necessary to conduct extensive provings. The *Homœopathic Encyclopædia of Pure Materia Medica* is an evidence. It consists of ten large octavo volumes of about 700 pages each; but if only the objective symptoms of the proven were necessary to establish the system of homœopathy, such extensive provings would not have been made. But the subjective symptoms have been considered indispensable both to better fulfil the law of *similia* and to find remedies that will do better work.

But limitation to the intelligent and successful practice of veterinary medicine may be shown in another way, and this directly attacks the integrity of the therapeutic law upon which homœopathy is based. In my experience the infinitesimal dose does not appreciably affect animals either in health or disease, but doses large enough to cause appreciable symptoms in the pulse, pupil, muscles, and mucous membranes, if administered in a disease characterized by the same or similar symptoms, will intensify those symptoms instead of relieving them. This you have observed in the use of belladonna, aconite, nux vomica, etc. Therefore the law of *similia similibus curantur*, practically followed as we must follow it in veterinary practice, becomes null and void.

A consideration of the breadth and scope of the rational system applied to the practice of veterinary medicine, when compared with the limitations naturally imposed upon the homœopathic system when it deals with the maladies of the

lower animals, ought to weigh in favor of the former method, and, unless it can be shown that success is more common and certain in homœopathy, ought of itself alone to detract one from adopting a circumscribed method.

Homœopathy in veterinary practice, finally, means to become a merely routine practitioner. To rely for success upon a supposed specific, judgment, discrimination, and skill can only be exercised in the selection of the remedy. Symptoms are everything. Causes and morbid conditions are nothing. It is not necessary to know the nature of a remedy, how it acts, or upon what it acts. If its symptoms correspond to those of the disease, the physician has done his work well. This reduces the practice of medicine to a simplicity.

Homœopathic remedies consist practically of tinctures and triturates. The tinctures are about the same strength as those of the *U. S. P.* The metallic and insoluble remedies are prepared in milk-sugar and dispensed in this form. The strength of a remedy is its dilution or potency: To produce a uniform series of dilutions a scale was introduced by Hahnemann, called the centesimal scale. According to this scale, one part of the mother-tincture or powder is mixed with ninety-nine parts of alcohol or milk-sugar. This forms the first dilution or potency. One part of this dilution in ninety-nine parts of alcohol, the second dilution. The principle is that the first potency must contain one one-hundredth part of the strength of the remedy, and the succeeding potencies each one one-hundredth part of the preceding one.

But, more recently, another scale has been introduced—the decimal scale. By this scale one part of tincture is diluted with nine parts of alcohol and similarly with the powders, one part in nine of milk-sugar, to form the first potency. In respect to the size of the dose authorities vary; some recommend the higher potencies—those above the thirtieth; others the thirtieth potency; others the third dilution of tincture and the sixth of insoluble remedies. But an exception is made of carbolic acid, aconite, rhus tox, bryonia, and others which may be used in the first or even in the form of the mother-tincture.

In applying homœopathy with the object of testing its value in treating the diseases of the lower animals it was necessary to form at least two classes; these were the acute critical and the acute non-critical. Of acute non-critical cases one-half were treated with homœopathy and the remainder

with no medicine. In non-critical cases of pneumonia treated with high or low dilutions, or with no medicine, I could find no substantial difference. The cases ran the course marked by various changes in each case according to the natural history of the disease and the age, temperament, and vitality of the patient. There were differences, but it was not reasonable to refer them to anything besides natural causes. There was no noticeable effect of the remedy upon the pulse, respiration, and temperature. Practically, in horses, I found no difference between the first or third or thirtieth potencies in non-critical cases of pneumonia. In acute non-critical cases of disease in the horse of whatsoever nature, the experience was the same. The hygiene and diet were made the best possible. The superiority of the regular treatment was established in its power to abort colds and incipient diseases of the respiratory tract. In some acute critical cases nature seems powerless when rational treatment may and does save life. Rational after-treatment lessens the convalescing period and prevents relapses. I had no success with homœopathy in cases of toxic poisoning; in cases where pain was an element to subdue; or in impaction of the bowels, anæmia, vitulary fever in cattle, azoturea, colic, chorea, diabetes insipidus, laminitis, tetanus, purpura, rheumatism, and collapse. I do not mean that cases so treated did not recover, but cases treated *placebo* recovered. But the action of the remedy could not be traced; no desired effect could be produced; my tools were not tools. Acute critical cases will do better without medicine, unless such treatment be intelligent and not a hindrance to nature. Regular treatment not intelligently used is worse than no treatment. Here homœopathy may win a few laurels, and somebody think they have made a valuable discovery. An unsuccessful regular practitioner in using drugs to alleviate disease can become a successful homœopathist. Nature's tendency to heal must be fully recognized. In cases in which the regular treatment was of no value in my hands, homœopathic treatment did not demonstrate its superiority.

In the study of the principles of homœopathy one is surprised at the large number of the same or similar symptoms produced by drugs of a dissimilar nature. Again, the number of diseases dissimilar in their nature and manifestation that are treated by the same remedy. Gunther mentions eighteen remedies useful in paralysis, and indicates that there are many more. Haycock uses arsenic in about fifty diseases of the lower animals; aconite

in over thirty diseases. Do all these dissimilar diseases have a totality of symptoms to correspond to the totality of the symptoms produced in an animal by a single drug? But it occurred that the symptoms of a disease may be removed in an animal and the morbid condition remain. Again, drugs do not produce the same or similar symptoms in healthy animals that are produced by some maladies which are treated by these drugs. Strychnine does not produce symptoms like paralysis, but it is used in paralysis by homœopaths. If the therapeutic law of Hahnemann were true, most maladies would be incurable. Homœopathy is not based on nature, but upon nature's most superficial and variable phenomena—symptoms. No system can become scientific on such a basis.

A few years ago I joined a class in Christian science. In this system patients were cured of their maladies of whatsoever nature; ruptures were declared healed; tumors were dissipated; rheumatics threw away their crutches, and bed-ridden subjects walked again. It looked like an era of miracles revived. The founder of Christian science in America, Mrs. Mary B. G. Eddy, was a homœopathic physician. In her work, *Science and Health*, she says, speaking of fevers, such as scarlet, typhoid, etc., that the higher the dilutions given the better success. She says it is not medicine but mind that heals. From this experience Mrs. Eddy thought she had discovered another proof of the power of mind to heal. But Dr. Roberts Bartholow, in his work on *Materia Medica*, says, speaking of the same subject: "Since we have learned the natural history of certain fevers, such as scarlet and typhoid, we find they can be most successfully treated with little or no medicine." Here was the secret and the truth. Christian science condescended also to treat the lower animals. We tried it. It was "weighed in the balance and found wanting." Were it not for human ignorance and credulity Christian science would have no following. But side by side with the boasted cures of Christian science, I place the boasted cures of homœopathy, and refer both these systems to nature, the only healer. But what benefit can these systems hope to achieve in treating patients that can exercise neither faith nor imagination?

But the homœopathic physician of to-day is instructed in anatomy, physiology, pathology, and allied sciences. He tells you that under the privilege of expedients he may employ any means, a remedy or a dose, in order to effect a cure. But

here the law of *similia similibus curantur* practically ends. Only in a very limited sphere is the great therapeutic law subser-vient, and in that sphere mind cure and homœopathy meet.

In order to correct a wrong impression, and one apparently shared by some physicians, let me state here that there is no allopathic school. Hahnemann coined the word allopath and applied it to those opposed to his principles. To be an allopathist would mean to be a member of an exclusive school. The principles underlying our school have been already mentioned. Again, we are spoken of as the "Old School," in contrast with the "New School," meaning homœopathy. If by this is meant that ours is a school of antiquated ideas and non-progressive, the name does not fit us. What valuable discoveries have been made in medicine that were not made by the regular school? No one will assert that homœopathy has placed a stone in the edifice of pathology or added any fact of value to medicine. The great therapeutic law of homœopathy was not original with Hahnemann. Paracelsus had announced it 300 years before Hahnemann had his practice and begun to experiment upon the action of drugs upon persons. The results obtained he called provings. To-day provings yet constitute the mass of homœopathic literature. By careful provings it is shown that drugs may produce almost an endless number of symptoms; from 2000 to 3000 having been recorded in some drugs. Dunham says it is scarcely possible to analyze the actions of belladonna upon the human system. But a comparison of these provings shows that many drugs of opposite nature will give the same proving. That the provings include the sensations of the organism that occur during the provings period (but independent of drug influence), there can be no doubt.

One thing, however, was original with Hahnemann—it was the idea of the infinitesimal dose; the potentizing of drugs. He believed that the higher the potency the greater would be the power of the drug. None were high potencies unless above the thirtieth. No known method of science can detect a trace of medicine in a potency above the fifteenth; scarcely above the third. It cannot be the medicine then that is so powerful to cure. It is now held to be the potentiality produced by giving the vehicle containing the drug a certain number of shakes. Twelve shakes for a tincture and so many turns for a triturate. The more shakes and turns the more power in the remedy,

until it may become very dangerous. Every drug is held to have a certain definite molecular activity which by shaking is imparted to the vehicle. Thus the vehicle becomes the remedy. It in turn imparts its molecular activity to the diseased protoplasm, which it restores to a normal condition. But this modern and ingenious explanation has not and cannot be demonstrated. It is not, therefore, of any scientific interest. But as before mentioned, since the safety of the law of similars depends upon the infinitesimal dose, it becomes necessary to resort to ingenious theories to prove there is virtue in the medicine prescribed in this manner. But we are not informed why the vehicle does not impart its molecular activity to the drug, or why the drug as it grows infinitely less in higher dilutions yet imparts an increased molecular activity. Hahnemann taught that when an insoluble substance was raised the third potency in milk-sugar, to obtain the fourth potency alcohol might be used, since the drug at this potency becomes soluble. It is to be presumed that his sense of sight and taste gave him all his knowledge of chemistry.

There are upward of eight hundred remedies in the homœopathic pharmacopœia. The *United States Pharmacopœia* contains less than one-half that number. The remedies are drawn from every department of nature; some of them will be regarded with curiosity and surprise. *Apis mellifæ* is made from the stingers of bees, *lachesis* from the venom of a poisonous snake, *lyssin* from the saliva of a mad dog, *vulpis hepar* from the liver of the fox, and *mephites* from the odor-substance of the skunk. *Psorinum* is prepared from the pus of the human itch. A tincture has been prepared from the pus of gonorrhœa and administered internally to cure that disease. The insect world furnishes the bedbug, cockroach, house-fly, head-louse, wood-louse, ant, potato-bug, spider, and others. These insects are crushed and their juices received into alcohol or milk-sugar. These tinctures are used for internal medication. The tendency to use the remedies and doses of the regular school of medicine has become general among progressive homœopathic physicians. A travelling man for a wholesale drug-house informed me recently of his having good customers in the homœopathic fraternity. That he sold more tablets to homœopathic than to regular physicians.

The homœopathic physician who a number of years ago urged me to practise veterinary homœopathy, and who treated

me with homœopathic remedies, gave the following prescription to one of my acquaintances: Potassi iodide, ℥iv; stillingia fl. ext., ℥ss; syr. sarsaparill. co. ad., ℥iv. Sig., etc. I reproached him with, "Doctor, is this homœopathy?" His reply was, "What difference does it make, if the medicine will do the patient good?" These illustrations show that the law of *similia* is not sufficient and is only partly adhered to, and then in minor ailments of the human family and in maladies that require more nursing than medicine. The Homœopathic Society of New York, in 1879, by a vote of thirty-three to fifteen, resolved that in the treatment of disease, the formula *causa sublata tollitur effectus* (cause and effect) is often to be remembered and used to advantage (Browning on *Homœopathy*). In a recent number of the *Homœopathic Monthly* Dr. Duke makes the broad statement that the law of similars is not applicable to any diseases which are characterized by destruction of tissues, or where the cause cannot be removed, or to such as are due to chemical action, mechanical violence, or unhygienic surroundings (Browning on *Homœopathy*). The *Medical Investigator* (a homœopathic publication) in 1876 said reprovingly: "How many claiming to be homœopaths are entirely disregarding the law of *similia*. It is getting to be quite a rare thing to hear of a homœopathic practitioner conducting a serious case from beginning to end without using, as such, cathartics, sudorifics, diuretics, etc., in direct opposition to our law" (*Encyclopædia Brit.*, 9th ed.). Says a writer in the *Homœopathic Times*: "To give one or more persons a drug, and register all their peculiar fancies and ideas, does not furnish any reliable evidence of the real effects of the drug." Says one homœopathist: "The question of potencies seems to have aroused a spirit of contention in the homœopathic fraternity about as bitter as any between the old and the new." Dr. Kidd says: "I have cast aside dynamized drugs *in toto* as untrustworthy and unjust to the sick" (Browning on *Homœopathy*).

With the homœopathic house divided against itself, with modern medical discoveries tending away from and not toward the doctrine of "*Similia*," isopathy is in no scientific sense like homœopathy. With the achievement of excellent success in the field of veterinary medicine according to the rational principles of the regular school, with boundless scope for the exercise of inventive genius and investigation afforded by a system of medicine that is bound by no law, but is free to work out

the secrets of nature in her department through the exercise of observation, experiment, and reason, and thus to eliminate error and arrive at truth, should we not be proud to be workers in such a field? To any who wish to investigate this matter I refer them to works from some of which I have quoted, viz.: *The Organon of the Healing Art*, *The American Homœopathic Pharmacopœia*, *The Homœopathic Encyclopædia of Pure Materia Medica*, Hahnemann on *Chronic Diseases*, Gunther, Haycock, and Boericke & Tafel on *Veterinary Materia Medica*, *The Encyclopædia Britannica*, 9th edition. Also, to an admirable *Essay on Homœopathy*, by Dr. Browning, of New York.

CANINE DISTEMPER.¹

BY HOWARD B. FELTON, B.S., V.M.D.,
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CANINE distemper is a disease that can be traced back to a very early period. Virgil writes of it in his *Georgics*, and there is no doubt that if the records had been properly kept we would find that neolithic man was acquainted with this disorder that gave his dog the running nose and weeping eyes, and was aware that the proper treatment was a supernal application of the pitchy products of the conifera. We find it described in the hunting-books of the middle ages. Hewitt, an English author, was the first to recognize its contagious nature, which was afterward demonstrated by Karle, Trasbot, Venuta, Krajewski, and Laosson.

Distemper is a disease proper of canines, although it has been observed by Laosson in both domestic and wild cats, and, according to Friedberger and Fröhner, in the fox, wolf, hyena, jackal, and monkey. To this list we must add man, as Zelinski, Nencki, and Karpinski have recently discovered that distemper can be transmitted from the dog to man, causing in the latter tenonitis, or an inflammation of the capsule of Tenon. A full account of this interesting discovery will be found in a translation, by Dr. S. J. J. Harger, of an article on "The Microbe of Canine Distemper," in the *Veterinary Magazine* for June, 1895,

¹ Read before the Pennsylvania State Veterinary Medical Association, Reading, Pa., October 6, 1896.

to which article we acknowledge our indebtedness in speaking of the specific origin of the disease.

Distemper has been claimed by some authors to be variola in the dog. By various others it has been spoken of as typhoid fever, typhus fever, scarlatina. While there are points of resemblance to all these diseases, it has been found, after a careful study and comparison, to be the most closely allied to measles. Both diseases affect young animals; each is ushered in by malaise, anorexia, and chills. In each we have catarrh of the nasal and conjunctival mucous membrane, respiratory troubles, cutaneous eruptions, and lesions of the nervous system. While the resemblance is remarkably close, however, we find in distemper lesions of the digestive tract which differentiate it from measles and assimilate it to typhoid fever, so that taken as a whole it must be regarded as a disease *sui generis*.

As to the specific agent in the causation of distemper much has been done in the line of original investigation and research. Semmer, in 1875, found in the blood and lungs of a dog, which had died of distemper, a micrococcus, and in the blood, lungs, liver, spleen, and kidneys a short, small bacillus. He considered the bacillus to be the specific agent. Laosson continued the researches of Semmer, and cultivated the micrococcus and bacillus from the dog in bouillon, and with these mixed cultures was successful in reproducing the disease. In 1891 Schantyr arrived at the conclusion that the micrococcus heretofore described was only a pyogenic micrococcus. From his opinion he distinguished (1) a disease of young dogs, determined by a small bacillus 1 to 2 μ . in length, grouped, found in the spleen, blood, and the liquid exudates, and liquefying gelatin; their cultures upon serum transmitted the disease; (2) an abdominal typhus caused by a bacillus 0.7 to 2.0 μ . long which did not stain with Gram's method; (3) a typhoid affection due to a bacillus shorter than the preceding, which does not stain with the above method. From 1892 to 1894 Zelinski, Nencki, and Karpinski made a series of observations and discovered in the discharges from the nose and eyes of dogs affected with distemper a micrococcus which was capable of producing in man an inflammation of the capsule of Tenon, and in some cases a diffuse bronchitis and pneumonia. This micrococcus is immobile and measures 8 μ . It can be grown upon bouillon and upon gelatin at 37° C. It is analogous to the streptococcus pyogenes albus, but it decomposes sugar and peptonizes albumin. Since

1893 Galli Valerio, from the Pathological Institute of the Veterinary School of Milan, has made a bacteriological study of this disease, and claims to be the first to have discovered a bacillus in the lungs and central nervous system, inoculations of the cultures from which have produced all the symptoms of distemper. He deduces the following conclusions: 1. In distemper there is found in the lungs and the central nervous system a bacillus whose dimensions vary from 1.25 to 2.5 μ . in length and 0.31 μ . in diameter. 2. This microbe gives characteristic cultures in gelatin at 18° to 20° C. 3. The inoculation of these cultures into the veins, under the skin, and into the lungs of aged dogs does not reproduce the symptoms of distemper. 4. The inoculation of a culture obtained from the brain under the skin of a dog five to six months old has reproduced the disease with its characteristic pulmonary and cerebro-spinal symptoms. It would seem from a review of all these experiments that more than one organism is concerned in the production of this disease, with all its train of complex symptoms.

Distemper usually appears at an early period in the dog's life; in most cases at the time of dentition. It may appear, however, at any age, the extreme limit we have observed being twelve years. The younger the dog the more fatal the disease is supposed to be; but an exception must be made in the case of extremely young dogs, as we have observed in the case of suckling puppies that had contracted the disease from the mother that they almost invariably have it in a mild form and free from complications.

The contagion is extremely volatile and may be communicated by direct contact of the animals with each other, by fomites, by an attendant, or by the air. Semmer relates a remarkable case where the disease was conveyed to two puppies from the carcass of an animal which had been left in the cold for fourteen days prior to an examination.

The period of incubation is from three to five days, shorter in summer than in winter. In cases free from complications this is followed by a slight fever, dulness, and loss of appetite, which last for about four days, the temperature rarely rising above 103° F. At the end of this time the eruption comes out, usually upon the soft parts of the skin and in most cases only in the inguinal region. This eruption may pass through the various stages of erythema, vesicle, pustule, and ulcer, although it is frequently seen simply as an erythema and sometimes only in

the form of a vesicle. The eruption does not penetrate the deeper layers of the skin, as we see in variola in the horse and sheep, but is entirely superficial. When the eruption comes out the fever drops, the appetite returns, and the vesicles scale off in about two days. Then comes a secondary eruption which scales off in two days and disappears. There is then a period of convalescence which lasts for about six days, so that the whole attack, if uncomplicated, will last about eighteen days. In highly-bred dogs the first fever may be very high and we may have death occurring due to repercussion, the eruption appearing internally as an intense congestion on the respiratory tract or on the intestinal tract, causing fatal gastro-enteritis. Death may also occur from irritation produced by the pustules. One attack usually conveys immunity, although some dogs will contract the disease a second time, and we have observed one case in which a dog had three separate attacks during a period of four months.

The complications may be divided approximately into three classes: 1. Respiratory. 2. Intestinal. 3. Cerebro-spinal. Respiratory troubles are usually ushered in by a coryza which may disappear in a few days, but in most cases it is followed by congestion of the lungs and broncho-pneumonia, which is indicated by an increase of fever alternating with chills, respirations greatly accelerated, and, in severe cases, flapping of the lips during expiration. On auscultation mucous and sibilant râles can be detected. The animal emaciates rapidly and refuses all food. The discharges from the nose and eyes become mucopurulent. When the nasal discharge becomes mixed with blood it usually indicates the breaking down of a large portion of the lung-tissue and points to a fatal result. The eyes may be affected with a conjunctivitis, which may terminate as such or may be followed by a simple keratitis, which may result in ulcerative keratitis. The intestinal complications may be enumerated as gastritis, gastro-duodenitis, jaundice, and enteritis. Gastritis is indicated by the inability of the stomach to retain food and a persistent vomiting of a frothy mucus which soon becomes mixed with bile. In gastro-duodenitis the matter vomited does not contain bile, but consists of a glairy mucus. Gastro-duodenitis usually ends in enteritis, and frequently, from extension of inflammation of the bile-ducts, in jaundice. Jaundice is almost invariably a fatal complication. We have observed that in distemper enteritis very often assumes a subacute form

so far as the manifestation of pain is concerned, although the organs after death may show the signs of intense inflammation. This is no doubt due to the toxic influence of the poison in the blood. There is observed in enteritis first an obstinate constipation, followed by a serous diarrhœa, rapidly becoming dark in color and mixed with blood. The discharges have a peculiar fetor, which is very characteristic. Dysentery frequently sets in, and in a few days the animal becomes greatly emaciated, foul-smelling, and a pitiable-looking object indeed. The discharges are passed frequently in very small quantities, often accompanied by tenesmus, which is liable to cause prolapsus of the rectum. We have found prolapsus of the rectum under these circumstances not to be amenable to treatment. Under the head of cerebro-spinal complications may be mentioned meningitis, myelitis, and chorea. Meningitis usually manifests itself in the form of epileptic fits, in which we have pivoting of the eyes, frothing at the mouth, and champing of the jaws. The animal may throw itself upon its back and utter shrill cries or moans. Meningitis may be exhibited in that rarer form in which the animal walks around continuously in a circle in one direction, either to the right or the left, and appears to be in a sort of stupor, showing indications of brain-pressure. A series of fits in rapid succession may be considered as indicating a fatal result, while one or two, especially if occurring early in the course of the disease, do not have a grave signification. We may look for fits in finely-bred dogs and those of a highly-nervous organization. Myelitis is indicated by a gradual progressing paraplegia, which in most cases is accompanied by anæsthesia of the parts affected. The paralysis usually preceded the fatal result, or, if the animal recovers, there will be in most cases an imperfect use of the hind-limbs. Chorea is a clonic spasm of the voluntary muscles, and may be general or local. It may come on at the end of the period of eruption, or may appear as a sequela some weeks after recovery. The muscular twitching is more marked when the animal is in a state of repose. Associated with it we very often have a high degree of nervous irritability, and the animal cries persistently as if in great pain, sometimes even in his sleep. In other cases the animal remains in good spirits and has an excellent appetite. The general form has been described as a paralysis agitans, and is not amenable to treatment. The constant motion wears the animal out; the muscles atrophy; the

animal becomes a miserable skeleton and succumbs to exhaustion. Some local forms, where one set of muscles only or one side of the body is affected, yield to treatment. In others, while the general health may be restored, the muscular twitching persists during life. In rare cases we will observe nervous phenomena simulating locomotor ataxia, in which there is loss of coördination in the movement of the limbs, a staggering, precipitate gait, the legs starting hither and thither in a very peculiar manner and the feet coming down with a stamp at each step. This condition is due to a diseased area affecting the posterior columns of the spinal cord and the posterior nerve-roots. As in the human subject, the use of the eyesight is necessary to prevent the animal from falling. We have not noticed, however, strabismus, ptosis, or neuralgic pains, which are characteristic of this disease in human beings. A rare complication of distemper is lymphadenitis, which we have observed affecting the submaxillary lymphatic glands, the glands on the side of the face, and, in two cases, the thyroid glands, forming abscesses with considerable sloughing of tissue and being very slow to heal. A rare sequela which we have observed and have not seen mentioned before is purpura hemorrhagica, a well-marked case occurring in a spaniel puppy, four months old, one month after recovery from a mild attack of distemper. The alterations are essentially those of a fever, the muscles being of a pale yellow color with little, red ecchymotic spots throughout their substance and the fat turned into little masses of gelatin. The blood is fluid and watery. In enteritis we find ulceration and infiltration of the intestines, especially of Peyer's patches and the solitary glands. In broncho-pneumonia we have congestion of the lungs, bronchi filled with frothy mucus, areas of V-shaped lobular pneumonia, and possibly presence of abscesses in lung-substance. In chorea and myelitis we have infiltration of round lymphoid cells into the spinal cord, medulla oblongata and cerebellum, and granular degeneration of the nerve-cells.

The treatment is essentially symptomatic. Many cases require no treatment but good hygienic surroundings and careful feeding. There is no disease where careful nursing is more urgently required. The eyes need frequent cleansing to prevent ulceration. The bowels need to be carefully looked after to prevent enteritis. The animal must be kept from drafts to prevent pneumonia, and, if a nervous subject, must be treated very gently to avoid fits. While these complications may occur

despite the best of care, yet the possibility of preventing them should cause us not to relax our vigilance. For conjunctivitis we bathe the eyes frequently with hot water and apply a solution of boric acid, 10 grains to the ounce. For a simple keratitis we use, thrice daily, a collyrium containing $\frac{1}{4}$ grain atropine and 2 grains sulphate of zinc to the ounce. We have never found it necessary to use a stronger solution than this. When ulceration of the cornea sets in we use, in addition to the collyrium above mentioned, dry oxide of zinc dusted upon the ulcers, being sure to have the powder free from grit and ground very fine. Our method is first to use the collyrium and then the powder. In some cases we have had good results from the use of honey in addition to the other remedies, applying two drops in the eye morning and evening. When the cornea has ruptured and the aqueous humor run out, granulations frequently spring out from the seat of the ulcer, which have been called staphyloma. It is often necessary to remove these with the knife, as they are exquisitely tender and cause the animal great pain and discomfort. Shoemaker's wax upon the nose is not to be despised, but we have found better results from fumigations of tar, which seem to exercise a decidedly beneficial action upon the disease, especially upon the bronchial complications. Care must be taken, however, not to make the fumes too dense, as in this case they prove too irritating. We find quinine to be indispensable in the treatment of distemper. In pneumonia we combine it with muriate of ammonium, giving from 1 to 3 grains of each in capsules, according to the size of the dog, three or four times daily. We also employ it in the intestinal complications combined with subnitrate of bismuth. We have had good results in pneumonia, especially in cold weather, from the use of a jacket stuffed with cotton-batting sewed around the chest and neck, placed on early in the attack and left on until some time after convalescence. In bad cases of pneumonia we have used $\frac{1}{120}$ to $\frac{1}{80}$ of a grain of strychnine as a respiratory stimulant with good results. We also give milk-punches frequently in small amounts, alternating with beef-tea when the animal grows tired of them. In gastritis and in mild forms of diarrhoea we have found salol and subnitrate of bismuth to be a good combination. In cases of persistent vomiting we give half-drop doses of carbolic acid and iodine every hour, together with small doses of egg-albumin given frequently, alternated with milk and lime-water. In

bad cases of diarrhœa, when the discharges are tinged with blood, and in dysentery we employ a combination of opium 1 grain, sulphocarbolate of zinc 1 grain, and bismuth subnitrate 5 grains. Also enemata of starch-water. We have found the best diet in dysentery to be raw meat or meat slightly broiled in butter, cut up finely, and given in small quantities. This is completely digested in the stomach before it reaches the inflamed bowel. We do not use purgatives, but employ olive oil for its laxative, emollient, and nutritive qualities. For epileptic fits we employ the hot bath and give mixed doses of pot. bromide and chloral, 5 grains of each, repeating every three hours and increasing the dose if necessary. Where it is necessary to use this remedy for some time we substitute bromide of sodium for the potassium salt, as it can be given in larger doses and is better tolerated by the stomach. In cases of locomotor ataxia when the animal travels around in a circle we have never had any good results from treatment. It would seem in the latter case that trephining is indicated if the proper spot could be found. In chorea we have tried every remedy proposed thus far, and must say that the only good results we have ever obtained have been by the employment of arsenic. We have not obtained the results which M. Monfallet gets by the use of quinine. It may be, however, that the cases which he cured did not have chorea as a result of distemper. It is our opinion, and that of a number of physicians with whom we have conversed, that chorea following distemper in the dog is of a much more intractable kind than that seen in children. We believe it to result largely from the anæmic condition of the blood, and the granular degeneration of the nerve-cells in this disease indicates that it is a very serious lesion indeed. In arsenic we have the valuable properties of a blood-tonic and a special stimulant to the nervous system. We begin with two drops of Fowler's solution thrice daily, increasing one drop every third day and pushing it up almost to the verge of poisoning, stopping altogether when the animal begins to vomit, and after two days commencing again with the smallest dose. In some dogs we find an idiosyncrasy against the use of Fowler's solution due to the lavender in its composition, and in these cases we employ the liquor acidum arseniosum, the dose being the same. With this treatment we have cured a fair proportion of cases, but, alas, far too few. The great trouble in the treatment of chorea is in the length of time it takes to effect a cure, the owner

usually becoming disheartened at the slow rate of improvement and ordering the animal destroyed. Many cases will take from three to six months to effect a cure. In others the twitchings may persist for a year and then disappear. We are anxiously looking for the discovery of an antitoxin which shall be both preventive and curative, and be a much more powerful weapon than any we are able to employ at present in combating this disease.

ADDRESS AT THE INAUGURATION OF THE NEW
YORK STATE VETERINARY COLLEGE,
SEPTEMBER 24, 1896.

BY PROFESSOR JAMES LAW,
ITHACA, N. Y.

It seems desirable to say a few words to you collectively, in view of the inauguration of a new enterprise in America—a State Veterinary College. As an English-speaking people, we have been especially influenced by English example in shaping many of our institutions, and in none more so than in those to which veterinary education has been committed. It has been a crowning glory of the Anglo-Saxon races that they have suspected and frowned upon a too paternal government. In Europe and America, in South Africa, Australia, and New Zealand, a prominent aim has been to restrict the functions of government to the protection of the citizen in his personal rights of property and conscience, in his lawful business enterprises, and his pursuit of pleasure. Education, it is true, came in for a constantly increasing share of national control and support, but this was for long mainly along classic lines, and was a legacy that came down to us from the early monastic and ecclesiastical schools. For purely secular education money was slowly and grudgingly allowed, with a wholesome dread of the evils to be apprehended from class legislation. That instinct of even-handed justice which demanded for the citizen a trial by a jury of his peers naturally recoiled from any proposition which looked like an appropriation of public money for the creation or benefit of any special class or guild. It is only in recent years that the manifest value to the nation in its competition with other nations of the highest knowledge and skill in science and arts has led to the founding and support of

technical and professional schools of all kinds, to keep the country in the forefront of the race of civilization and progress. As the Anglo-Saxon peoples have gradually awakened to the need of government provision for technical education, those branches which seemed to be of the greatest material value were naturally the first and most liberally dealt with, while those in which the prizes were smaller or the triumphs less striking and competition less close were still left to shift for themselves.

In Great Britain there has never been a State Veterinary College, and the four existing schools have been all founded by private enterprise and conducted independently of State grants. In America, as in England, the veterinary schools have been private ventures, and consequently largely dominated by the financial results. The founders of such schools were met at the threshold by the imperative questions: "Will the venture pay? Can we secure fees enough to sustain it? Will the name of the college bring us greater and more remunerative practice? Will the prospective fees, fame, and practice warrant the investment?"

The answer is necessarily dominated by the question of money, and the temptation is great to subordinate the educational consideration. The pressure is heavy: 1. To shorten the curriculum; 2. To admit ill-prepared candidates; 3. To graduate large numbers irrespective of fitness; 4. To further abridge the already short course; and as a final degradation, 5. To sell diplomas. To this last, lowest depth of sordidness more than one veterinary college in America has sunk. But short of this, even the surviving and honorable colleges have been one and all prevented from achieving the status which the nature of the subject demanded. The preliminary education and the trained mind, which are requisite to the pursuit of science, have not been required for matriculation, and the course has been abridged to such an extent that even a trained mind cannot successfully cover the required ground in the time allowed. Meanwhile the field of veterinary science has been rapidly enlarging, deepening, widening, and becoming more thoroughly cultivated, so that the insufficiency of the untrained student and short curriculum has become more and more marked year by year.

The contrast with the schools of veterinary medicine on the continent of Europe will emphasize this statement. In entering a Continental veterinary school the student must show that he

has graduated from a *real skule, gymnasium, or college*, and he must pursue a veterinary course of from three years and a half to five years of nine or ten months each ere he can hope to secure a degree. Add to this that the great advances in medicine have been such that the majority of the students have to study an additional year ere they can secure the coveted diploma, and we can appreciate the hopeless inadequacy of a course of two or even of three sessions of five or six months each, which has not been preceded by a mental training in high school or college.

These continental veterinary colleges would have been not more thorough than the English or American had they been dependent on private enterprise. But there is no veterinary college on the continent of Europe to-day that is not a ward of the government. Each one has been founded and is sustained by the commonwealth, just as are the army, the navy, the experiment farm, etc.

This paternalism is founded on a long experience of their value, of which I may be permitted to give a single example. The disease rinderpest, which confines its ravages to ruminants, and, as its name indicates, almost entirely to cattle, formerly spread over most of Europe at frequent intervals, killing 20 to 95 per cent. of the bovine race at a single invasion. Paulet tells us that in Western Europe in three years (1711-14) it cut off 1,500,000 head of cattle, and Faust says that in the whole of Europe in four general invasions, dating from 1711, it destroyed not less than 200,000,000 head. At \$20 per head this reaches the astounding sum of \$4,000,000,000. So late as 1884, according to Reynal, it destroyed 1,000,000 head in Southern Russia alone. Thanks to the veterinary profession of Europe this disease can never attain such boundless sway, and though still extended at intervals in the course of belligerent armies or in the channels of trade, it is always met with intelligent measures of control and speedily suppressed.

This is but one of the deadly plagues of the Old World, the ruinous extension of which led in 1762 to the establishing of the first European veterinary school at Lyons, France, under the presidency of Bourgelat. This was followed a year later by a second school at Charenton, near Paris, and still later by a third at Toulouse. These were succeeded by a score of others in the different countries of the continent, and all at the national charge and under government control. They are justly looked upon as economic investments, not only for the restriction and

extinction of the plague, but also for the conserving of the lives and efficiency of the horses of the cavalry and artillery, for the protection and fostering of the various animal industries, and indirectly, though no less certainly, for the permanent preservation of the fertility of the soil.

The results have abundantly vindicated the wisdom of the investment. The protected herds have furnished a cheap and abundant food for the growing population. The increasing demand for cattle food and the multiplying of the natural sources of rich manure have combined to enrich the fields and improve the crops. The improved agriculture and abundance of food-products have fostered every branch of manufacture and trade and contributed to a substantial prosperity.

The contrast in countries where veterinary science has been ignored is quite instructive. In South Africa, apart from the mining interests, grazing has long been the main source of wealth. Into this country lung-plague was imported in infected Dutch cattle in 1854, and extending on the unfenced grazing tract, under a semi-torrid climate, proved so disastrous that, according to Lindley, whole herds of one or two hundred head would perish without a single exception. At that time the Matabele chief, occupying land protected on two sides by inaccessible cliffs, successfully defended his passes against the diseased cattle and saved the wealth of his people.

Recently a cargo of cattle from infected Hindostan has implanted the still more redoubtable rinderpest in South Africa, and in the disturbed condition of the country this has penetrated even into Matabeleland, and bids fair to destroy the cattle industry of South Africa.

Again, the lung-plague imported into Australia in 1859, in a diseased English cow, was allowed to spread over the whole island continent, and permanently blighted the cattle industry in one of the finest pasture-lands on earth. In England this same lung-plague in the forty years succeeding 1842 cost the nation \$500,000,000. In the United States the same plague prevailed in our eastern seaboard States for over forty years, causing losses that have never been estimated, and incidentally leading to an embargo on American cattle in England which entailed a loss of \$10 a head on an average to the exporter. This alone amounted to \$2,000,000 per annum. It was only when the plague reached the centre of our cattle traffic (Chicago) and bade fair to invade the whole country, including the unfenced territories, and to

repeat in America the experience of South Africa and Australia, that the National and State governments were roused from their lethargy, and we were empowered to take efficient measures for its extinction. Happily now it has no place on this continent, and, with reasonable precaution, can never make a new invasion. The same line of thought and similar historic facts could be followed and adduced as to the other animal plagues, including affections caused by the larger animal parasites, as to enzootic diseases caused by faulty conditions of the environment, as to constitutional diseases due to errors in breeding, diet, and regimen, and as to local diseases, many of which are due to improper treatment.

In America, as in Europe, we can successfully maintain that the benefits already drawn from the veterinary profession have abundantly vindicated its claim to State support. But the prospective value of the work of veterinary investigation and education far exceeds all that it may have accomplished for the nation in the past. Among our horses glanders yearly claims a large and valuable contribution to its devouring poison. Among cattle, anthrax, tuberculosis, and southern cattle fever cause widespread though needless destruction. Among sheep, flocks are decimated everywhere by remorseless parasites, internal and external. Among swine, the preventable infectious fevers cost the nation, on a low estimate, 20,000,000 per annum. Among fowls, the prevalent contagious affections are no less disastrous.

In the matter of numbers, the wealth at stake in the live-stock of America is as great as that of European nations, and, to the reasoning mind, is not less worthy of measures for its protection. In four of the most important countries of Western Europe the aggregate of the farm mammals is considerably less than that of the United States. Yet these four countries of Western Europe (France, Belgium, Holland, and Germany) have eleven veterinary schools maintained and fostered at State expense. Surely our own Empire State, with its 9,500,000 of farm mammals, with its large emporia at Buffalo, Albany, and New York for the reception and diffusion of live-stock from other States, and its record of a recent riddance from a cattle plague which for over forty years had hung like a pall on the cattle industry of the State, and exacted a tax of two millions or more per annum from home herds and exports, is fully justified in establishing a State Veterinary College.

(To be continued.)

ABSTRACTS FROM FOREIGN JOURNALS.

UNDER THE DIRECTION OF

J. PRESTON HOSKINS, PRINCETON, N. J.

ACTINOMYCOSIS OF THE LOWER JAW. Ducor, of Paris, reports a case of an enormous tumor on the lower jaw, with great emaciation and general distress. The patient belonged to the upper classes and submitted to treatment from twenty surgeons during eight years before a correct diagnosis and relief were obtained. Ducor suspected and established the presence of the ray fungus, and secured great improvement with potassium iodide, 2.5 grammes per day, painting the intrabuccal surface of the tumor with tincture of iodine, and injecting it into the parenchyma, mixed with equal parts of glycerin. Potassium iodide in this case again showed itself the specific remedy for actinomycosis, although the lesions were of too long standing to expect complete recovery.—*Monthly Retrospect of Medicine and Pharmacy*.

PROFESSOR SAVTCHENKE (*La Presse Médicale*) has recently described a new microbe which produces a disease similar to that caused by the fungus of ordinary actinomycosis.—*Modern Medicine and Bacteriological Review*.

CANINE RABIES IN INDIA. Mr. J. C. Vaughan, of West Bengal, contributes a paper on this subject to the *Indian Medical Gazette* for August, in which he gives a detailed account of his experience with rabies in his own dogs, the main points of which are as follows: In every case, he says, the first thing which aroused his suspicions was an excess of freshness, a greater show than usual of affection for their master, and a somewhat increased display of vigor and vitality in all they did, with a slight nervous excitability; but there was no irritability or snapping at other dogs. There was, perhaps, a tendency to bark too much for no ostensible reason. The preliminary catarrh, of which the veterinary surgeon Mr. Martin speaks, did not occur in these dogs. The suspicious symptoms never proved to be a false alarm in the author's experience. The excitability showed a steady tendency to in-

crease, and within twenty-four hours the dog's eyes became dull and there was a half-drugged, far-away expression in the face and eyes which was strangely out of keeping with the still restless and excitable manner. At this stage the food was eaten with increased greed and haste; there was still the curious, isolated, purposeless bark, which was distinctly changed from the sound of the full bark. This voice-condition was the first symptom of the weakening of the muscular innervation of the pharyngo-laryngeal region, which, says the author, is so distinctive of hydrophobia. At this time also a frequent movement of the tongue was noticed.

Gradually the excited manner quieted down, although occasionally the old excitement broke out and the eyes flashed with a dull light. In the next period of the affection there were tremors of the limbs, subsultus tendinum of all the legs, and a quivering in the lower jaw; there was a troubled sleep, from which the dogs awoke more restless than ever. They were now quite mad, says Mr. Vaughan. The excitability, which had returned, the dull look in the eyes, the dilated pupils, the staring coat, and the slight stagger of the hindquarters which had set in, made up a picture which it was impossible to mistake. The dogs refused solid food, the temperature rose, the urine was high-colored, and the feces were almost black. Though they were still docile, continues Mr. Vaughan, and glad to receive their masters or visitors with expression of affection, it was at this time that they became uncertain.

In this condition, he says, their jaws may snap together in the excited affection they show, and they bite without meaning to. From this time they seem gradually to lose self-control and become more and more dangerous. Even at their very worst, the author states that his dogs never altogether lost their self-control, and that he was able to go up to them, carefully gloved, and pat them, and, although they snapped their jaws at him, it was unintentional, as their manner showed. The paralysis of the hindquarters and of the pharyngo-laryngeal region increases at this stage, and the period of excitement passes more or less quickly into one of deepening stupor, from which there are often convulsive awakenings; the intervals between these grow longer, and finally death ensues.

The author states that he watched these cases very carefully to the end, and it is very clear, he thinks, that the disease described is the form known as furious rabies. Dumb rabies

begins very much in the same way; the restless sleep seems to be the turning-point, and the dog wakes up paralyzed, with dumb rabies or the furious form. A very dangerous period in the disease, Mr. Vaughan thinks, is the preliminary stage, just before the expression changes, for the nature of the case is then so hard to recognize.

A very important point is the question of the immediate treatment of bites from rabid dogs or doubtful ones. The author has always practised washing the wound freely at once and then burning it, not with solid silver nitrate, as is the usual way, but with strong fuming nitric acid or with strong hydrochloric acid.

Even in the case of bites from rabid dogs this plan, he states, has effectually prevented hydrophobia. This treatment was carried out in the case of a relative of the author, who was bitten by a rabid dog twenty-four years ago, with a successful result, for the man is still living. On one occasion several dogs were bitten by a rabid dog; this treatment was at once instituted and none of the dogs died of hydrophobia. Mr. Vaughan thinks that the same trust cannot be placed in nitrate of silver, for the following reason: When it is a question of a deep bite from the long canine fang of a dog, the tooth, which is a blunt instrument, has been driven by main force through the skin into the tissues, and, when so driven in, was coated with the poison-containing saliva, which was forced into the intercellular spaces of the tissue penetrated by the tooth, and although some of it lies in the wound-cavity or lines the edges of the wound-cavity inside, some or most of it has been jammed into the intercellular spaces around the cavity and lies deeper in the tissues. The wound-cavity in the meantime is filled with it and its sides moistened with serum-containing albumin. The nitrate of silver stick now penetrates into the wound-cavity, reaches the saliva and serum lining its sides, kills the lining-cells, and coagulates all the albumin within reach. The albumin-film thus formed makes, no doubt, says the author, a film which only protects the deeper-lying saliva and its poison; and in a deep, penetrating bite, forcing in a stick of nitrate of silver is very much like repeating the bite, and serves to drive the deeper-lying saliva only deeper still into the tissues and so to place it further outside, hence better protected by the albumin-coagulum film formed in the wound by the nitrate of silver treatment. If no albumin was coagulated in the wound, the caustic would or

might reach the furthest-off and most deeply lying saliva. But as nitrate of silver forms an albumin coagulum, why not use, asks the author, an equally strong caustic which forms no coagulum? Hence the use of the fuming acid, which dissolves all albumin it reaches and penetrates at once, without the use of force, into all the surrounding tissue-spaces. The same holds good for all kinds of bites, and the penetrating acid kills all it reaches. One or two drops suffice for each bite, the slough soon separates, and the clean wound then left heals readily.

Mr. Vaughan states that he has treated a great many bites in this way, and when his own dogs went mad he invariably found that they had been bitten while he was away from home.

For the preceding reasons he says that he has always strongly objected to cauterizing any bites with nitrate of silver, and has invariably advocated the use of strong acid. But whatever the immediate treatment is, it must be prompt.

OPERATION UPON A FISTULA OF THE RECTUM. (Novotny, in *Thierärztl. Centralblatt*.) A cavalry horse showed a small mass of matter in making evacuations. Novotny made an examination of the rectum and found a button-shaped excrescence the size of a hazelnut in the middle of the right wall of the rectum about 4 cm. from the anus. On pressing the excrescence a small mass of fetid matter mingled with blood presented. A probe could be pushed forward diagonally against the right branch of the intestine (junction of the cross-intestine bone) for 20 cm. without meeting any resistance in the whole canal. In three days a flat, painless swelling formed in the middle of the right rump. On forward movement of the foot about one-half litre of fetid matter exuded from the rectum. Not being able to find anything in regard to the treatment of such cases Novotny decided to open the swelling from the outside. At a depth of 10 to 13 cm. he found a hole the size of a man's head, from which one-fourth kilogram of dead tissue was removed. This hole communicated with a second, which opened near the transverse prolongations of the cross-bone, and extended toward the anus, terminating in the rectum. A drainage-tube was placed in the hole and through the fistula, and the wound was sprinkled with iodoform and cotton laid upon it. With the aid of a 3 per cent. creolin solution healing took place in eight weeks.—*Schweizer Archiv*, January and February, 1896.

EDITORIAL.

THE EXAMINATION OF AMERICAN CANNED MEATS IN GERMANY.

AND now the canned meats which we are shipping to Germany must be opened and examined before they can be offered for sale, which practically means their exclusion from that country. Is it not time for our government to take some step that will savor of retaliation against these prohibitive measures aimed at American products? Why not, for a starter, prohibit our Sugar Trust from pouring millions annually into Germany for the purchase of sugar, the beet-roots for which could be grown better and in larger crops on thousands of acres of our own lands that are impoverishing the farmers in their endeavor to raise cereals? This would be of twofold value to our people: It would save millions to our own people, and would restrict the power of the Sugar Trust; for, with the growth of sugar-beets independent refineries would spring up over our land, and a single concern could no longer control the whole output of sugar and be the sole employer of a very large body of people, whereby the trust is enabled to fix the terms of employment and wages, from which there is no appeal. Let us give it a trial, for these every-day restrictions placed by foreign nations on our products are gradually lessening the foreign field for our surplus animal food-products, and thus contributing to the continued depression of our live-stock industry. This comes directly home to the veterinary profession, and we should be quick to respond, and by our influence aid the accomplishment of this much-to-be-desired state of affairs. Move on!

SANITARY POLICE MEASURES MUST BE ADOPTED.

THE cable brings news of an outbreak, among the people of Berlin, of a pustular character involving the mouth and throat, with severe inflammatory symptoms and great thirst. Prof. Virchow, after an examination, decided it to be due to infected milk, and says it simulates closely the foot-and-mouth disease. The dangers of consuming raw milk are gradually being better appreciated and are tending strongly toward the adoption of measures looking to greater safeguards and sanitary police regu-

tested, and much is expected of it in the solving of higher veterinary education for our associates and successors. The dangers of private undertakings and one-man institutions have long been a source of deep concern and earnest thought for those who have striven at all times to advance veterinary science in America. Another page is added to this history by the closing of the doors at Cincinnati; and what is the cost? What are the results? Some will say not serious in extent; which perhaps is true; but how serious in character only those can appreciate who have labored in the educational field, and will be bitterly regretted by those who entered upon the undertaking as a money-making venture—a stock company where great returns were looked for from the investment, and who are now vexed and disturbed by lawsuits and referee hearings in court, whereby they may escape from as much costly experience as the technicalities of the law will allow; some of the stockholders insolvent, who perhaps never invested a dollar; a number of young men throughout the country without parental oversight, so defectively educated that the strong arms of the national association cannot receive them, and perhaps barred out in the future from some of the State organizations. In disgrace its first leader was forced from its directorship, and the many changes that followed seemed only to hasten the inevitable end; a number of promising young veterinarians drawn to its staff of instructors, hoping thereby to attain the honors that would naturally follow in the train of their vocation, are now drinking the cup of sorrow, as they realize what a glittering bauble the whole affair was, and how empty an honor when it comes freighted with conditions that were essential, first, last, and all the time, for the perpetuation of schools started under such auspices. Born of no scientific parental love, devoted to no higher aspects of educational advancement than a business undertaking could create, it dies unlamented and will soon be forgotten, with the hope that it will never be resuscitated under such auspices.

AN interesting little book has been issued by the State Board of Veterinary Medical Examiners of Maryland, containing a copy of their law, list of registrations under the Act and laws creating a State Veterinary Sanitary Board, and applicable to the control and suppression of infectious and contagious diseases among live-stock. It is neatly printed and will prove a ready reference

originating outside of the district described by the order dated February 1, 1896, as amended by subsequent orders, and which are infected with the *boophilus bovis* ticks, shall be considered as infectious cattle, and shall be subject to the rules and regulations governing the movement of Southern cattle. Stock-yard companies receiving such cattle shall place the same in the pens set aside for the use of Southern cattle, and transportation companies are required to clean and disinfect all cars and vessels which have contained the same, according to the requirements of this department."

Hog-cholera is prevalent in many of the Western States, especially so in Ohio, Indiana, and South Dakota.

Louisiana. Tuberculosis has been found among the herd of the State Experiment Station, a test revealing six of the herd of twenty-two affected. These latter have been isolated, and, with the healthy ones, will be retested from time to time and the diseased ones returned to the herd only when they cease to react. The calves will be taken from the mothers at birth and fed milk from healthy cows only, to see how thoroughly the disease may be eradicated by this system (Prof. Bang's), and thus avoid the great pecuniary loss to the station. All of the cattle responding were well bred, and among those purchased native cattle seem to have a greater immunity from the disease. A test of the relative percentage of butter-fat present in some nine of the animals before and after injection proved interesting. The variations were quite marked, in some instances as much as 2.8 per cent. But one cow, a Jersey, presenting generalized tuberculosis, was destroyed, and the carcass cremated. Disinfection of premises will be carried on at regular intervals.

New York City, from January 1, to August 31, 1896, received 53,755,433 gallons of milk; of cream and condensed milk 2,283,130 gallons.

Austria reports the finding of trichina in American pork, but so much chicanery and deception in our foreign meat-products are practised by dealers, even to the extent of removing the canvas coverings from hams and placing the same on home-grown products, that those in charge of the Bureau of Animal Industry are very loath to accept the alleged finding.

SOCIETY PROCEEDINGS.

VETERINARY ASSOCIATION OF MANITOBA.

THE semi-annual meeting was held in the city of Brandon on August 29th. The members present were: Drs. Swenerton, of Wawanesa, Vice-President; Dunbar, of Winnipeg, Secretary-Treasurer; Rutherford, Portage la Prairie; McLoughrey, Moosomin; Coote, Winnedosa; Ward, Oak Lake; Torrance, Fisher, and Coxe, Brandon. The President, Dr. Young, of Manitou, being unavoidably absent, Vice-President Swenerton occupied the chair.

Dr. Rutherford, in an appropriate speech, introduced the subject of typhoid-malarial fever in the horse, a disease of a somewhat fatal character which has been prevalent in the Red River Valley for several years, being specially noticeable during the months of July and August. An interesting and profitable discussion on the cause, nature, and treatment of the disease followed, which was participated in by Drs. Torrance, Fisher, Swenerton, Dunbar, and others.

Influenza and pernicious anæmia, two diseases very common among the horses of this province, received from the members present the consideration which their importance demand.

Dr. Rutherford described, in a manner which reflected great credit on his faculty of observation, the ante-mortem and post-mortem symptoms of pernicious or progressive anæmia, called in India "surra."

The meetings of the Association are steadily gaining in interest and are doing a good work in advancing the veterinary art in Manitoba, and every member who desires to assist in elevating the standard of the profession will find it much to his advantage to be present, if possible, at every future meeting.

The next annual meeting will be held in the city of Winnipeg, in February, 1897.

W. A. DUNBAR,
Secretary.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

THE regular monthly meeting was called to order at 8.30 P.M., October 7th, by the President, Dr. Huidekoper, at the Academy of Medicine. The following members responded to the roll-call: Drs. Delaney, Dair, Ellis, Giffen, Gill, Huidekoper, Hanson, Loomes, Machan, MacKellar, Neher, Robertson, and Ryder (13). The minutes of the previous meeting were read and approved.

Moved and seconded that the report of the Board of Censors (Dr. H. D. Gill, chairman) be voted on in sections; carried.

1. Johnson's case. 2. Ferster's case. 3. Glover's case. 4. Recommendations to be presented by the chair to Judiciary Committee.

The charge against Dr. S. K. Johnson, for breach of Article VII. of Code of Ethics, was referred back to the Association for the reason that the Board of Censors had no jurisdiction, as a motion relative to the case had been passed at a meeting held April 7, 1896, which was as follows: "Resolved

that the Board of Censors recommend to the Association that if the said Dr. S. K. Johnson does not show satisfactory evidence of having resigned and severed all connection, directly or indirectly, with the said insurance company on or before October 15, 1896, he be expelled as a member of this Association." Moved and seconded that the report be accepted; carried.

The acceptance of Dr. J. H. Ferster's resignation was at the last meeting laid on the table. The Board of Censors finds that Dr. Ferster, at the date of his resignation, was in good standing; therefore recommends the acceptance of the same. Moved and seconded that the report be accepted; carried.

The charges against Dr. H. Clay Glover were for a breach of Article VI. of Code of Ethics and the improper and illegal use of the title D.V.S., and he was recommended to the Association for expulsion, and they also suggest that the attention of our Judiciary Committee be called to the latter fact. Moved and seconded that the report be accepted; carried.

Information having come to the Board of Censors that meat-inspectors employed by the New York City Health Department and the Bureau of Animal Industry were not veterinarians, and consequently illegally practising, the matter was referred to the Judiciary Committee for immediate action.

Dr. W. Herbert Lowe, of New Jersey, read a very excellent and carefully prepared paper on "Heredity." The discussion was opened by Dr. Hanson, and followed by Drs. Gill, Neher, and others. Moved by Dr. Hanson and seconded by Dr. Robertson that a vote of thanks be extended to Dr. Lowe for his paper and interest shown in the Association; carried.

The Board of Health Committee (Dr. Robertson, chairman) reported progress. The committee was then directed by the chair to continue for another month, and report in writing at the next meeting.

The following gentlemen presented applications for membership in the Association: F. E. Winslow, of Flushing, L. I., and J. W. H. Wright, of Long Island City.

Moved and seconded that a vote of thanks be extended to visiting members for their courtesy in accepting the Association's invitation to be present at the meeting; carried.

Moved and seconded that the meeting adjourn; carried.

ROBERT W. ELLIS, D.V.S.,
Secretary.

ONTARIO VETERINARY MEDICAL COLLEGE SOCIETY.

A MEETING of this Society was held on Wednesday evening, October 14th, for the purpose of electing officers for the academic year, with the following result: Permanent officers: Andrew Smith, F.R.C.V.S., President; James Thorburn, M.D., First Vice-President; J. T. Duncan, M.D., V.S., Second Vice-President; and C. H. Sweetapple, V.S., Third Vice-President. Elective officers: W. W. Richards, San Diego, Cal., Secretary; R. C. Cliff, Hamilton, Ontario, Assistant Secretary; A. C. Tweedie, Carson City, Mich., Treasurer; and G. C. Bowen, Newark, N. J., Librarian.

The Society meets bi-weekly for the reading and discussion of papers and essays on professional subjects, and it is our object to have interesting and instructive meetings.

The Society held its first meeting of the session 1896-97 for the reading

great dangers constantly existing in these directions, and veterinary sanitary work was every day bringing forth wiser methods and better plans to deal effectively with these grave dangers, and it became the great duty of all city officials to be ever in advance of their citizens in leading in all movements to increase the safeguards from unseen dangers and thus wisely and well preserving and perpetuating to their people the greatest freedom from sickness, suffering, and disastrous results so far-reaching in every community where officials were forgetful of the great responsibilities attendant upon the honorable position of chief magistrate of a body of confiding people.

The President then read his address, which proved a thoughtful presentation of the work of an association like this. He referred to its growth and power, and how much there was dependent upon each member to fulfil his part of the labor, that there might flow forth a great return for the great privilege enjoyed. A brief review of his labors during the first period of his stewardship was referred to, and his sincere appreciation of the ready response to most of his requests that had been made upon the members. Brief outlines of his future plans were referred to with a sense of approval of the members, showing a thorough appreciation on his part of the responsibilities that followed in the train of his elevation to the Presidency. The programme was the most striking evidence of the success of his work, and it seemed a very great disappointment to all present that there was not a stronger attendance to hear the excellent papers read.

Dr. Wm. Jobson, graduate of the National Veterinary College; W. Howard Wilson, graduate of New York College of Veterinary Surgeons; Wm. P. Phipps and Edwin Hogg, graduates of the Veterinary Department of the University of Pennsylvania, were elected to membership. The resignation of Dr. A. O. Koenig was accepted. Letters of regret at inability to attend were received from Drs. Ross, Stanton, Timberman, and Rhoads.

The Corresponding Secretary's report was feelingly delivered, and the needs of the veterinary profession strongly alluded to. That their labors should be rewarded by yellow coin was startlingly elucidated, and its semi-political tenor a new innovation in scientific circles.

The Treasurer verbally reported the condition of the treasury as a healthy one, and the payment of members' dues more prompt and complete. He remarked that the collection of dues was always in order, at which suggestion there was an outpouring of dollars (mostly of the white coin) into the Corresponding Secretary's hands.

Under unfinished business the question of aiding the State Board of Veterinary Medical Examiners was discussed, and the Legislative Committee empowered to collect additional money to sustain the board in its prosecution of offenders of the several Acts governing the practice of the profession in the Keystone State. The Legislative Committee at once started a fund for this purpose, which was liberally subscribed to by those present.

Several very interesting reports were read from county secretaries, containing information of importance to the profession and some records of value to the State Board of Examiners. Reports were read and received from Berks, Crawford, Erie, Franklin, Lackawanna, Lancaster, Lebanon, Montgomery, Philadelphia, and Venango.

Chairman Zuill, of the Committee on Intelligence and Education, was

absent, and for some unknown reason had failed to compile a report. Several of his co-workers present reported that they had not heard from him, and, therefore, were unable to make any response to this important aspect of association work.

The report of the Committee on Sanitary Science and Police was called for, and Chairman Pearson responded in his usual interesting and felicitous manner, apologizing first for his inability, for want of time, to present a carefully written report, after which he immediately plunged into the text of his subject, not forgetting to give the JOURNAL a vigorous shot at its editorial destined to allay the fear of the people and thus lessen the dangers of rabies and hydrophobia. He reported an extremely interesting infectious venereal disease that had prevailed in enzootic form near Brookville, Jefferson County. It was found to exist in an imported French black stallion and thirteen of the mares he had covered. It was accompanied with urethritis and ulcers of the penis in the horse, and in the mares by a vesicular eruption of the vulva and vagina, with purulent discharges. The stallion subsequently died and was reported as having broken-out with sores over the body like farcy before death. The stallion was quarantined for some months before his death, and the mares were restricted to the farms where they belonged. The disease was not el dourine, but, as diagnosed by Dr. Pearson, a contagious vesicular disease. Under creolin and sulphate of zinc solutions the mares made good recoveries. The stallion covered successfully only one of the mares. A number of reports of anthrax were received from the mountainous districts, where boggy areas existed. In many cases reported it proved to be red-water from the eating of weeds and over territory that had been burned the year before. Thirty-five cases of glanders were reported. Rabies and its correlative, hydrophobia, had proven of much concern and created quite a scare. Investigations were conducted in Union, Centre, and other counties. In Union County a collie dog was at large for two days with rabies, biting many other dogs, all of which were killed save one, which escaped to Centre County, where it attacked a steer, other dogs, and pigs, which became rabid. Another rabid dog, at large for three weeks, ran west and entered Penn Valley, where it bit many dogs, some swine, involving seven farms. On one farm fourteen out of fifteen swine were bitten. There were five propagations of the disease in three months. In Columbia County, Dr. Winner, a veterinary surgeon, of Bloomsburg, was bitten, which in three weeks was followed by paralysis of the throat, mania, and death. In Allegheny County two men and three boys had died with hydrophobia. Another case, sent three weeks after being bitten to Pasteur Institute, New York, was so ill when Harrisburg was reached that he was taken off the car in spasms and died next day. Hog-cholera has prevailed in several sections, 300 to 400 having died in Centre County. Wherever prevalent the premises were disinfected and herds quarantined. As to tuberculosis, the State Veterinary Sanitary Board had received severe criticism for its extreme conservatism in dealing with the disease. Some 2400 animals had already been examined, of which 25 per cent. were tuberculous and destroyed, involving an expense of \$14,000. In some parts of the State but very few cases were found; of Lackawanna County this was true. In Bradford, the great dairy county, the disease has been found in but two herds, both of these of registered animals. In one herd of 73, 59 were tuberculous; in another herd of 12, 8 were tuberculous;

most herds were free. Five or six different veterinarians were employed, and three different preparations of tuberculin used. Reports of cerebro-spinal meningitis were received, but no action taken. The resolutions of this Association adopted in March have terminated in the Board allotting money for a laboratory at the Veterinary Department in Philadelphia, and the employing of a bacteriologist to investigate infectious abortion, cerebro-spinal meningitis, osteoporosis, etc. Another disease affecting a considerable number of cattle and first thought to be tuberculosis, and where tuberculin was used, failed to give any reactions, proved, on killing the animals, to be a peculiar form of pneumonia—a chronic pneumonia with greatly increased fibrous tissue. A section showed areas of necrosis resembling tuberculosis. Inoculation of other animals failed to produce any tuberculosis, and other tests were equally negative. One other similar outbreak was reported through the Bureau of Animal Industry, in the stock-yards of Baltimore, and one in Adams County, of this State, where two or three herds were found affected, probably due to some local conditions. Diagnosis—chronic catarrhal pneumonia. The poultry interests of Pennsylvania are a very valuable and important industry, 9,000,000 in number produced in one year \$14,000,000 of eggs. The poultry-yards of our country are as valuable as our wheat-crop. The poultry-yards of Pennsylvania are worth as much nearly as our dairy products. Ten per cent. of these fowls die annually. The diseases of poultry will be referred to in an early bulletin to be issued by the State Live-stock Sanitary Board. The report of the Chairman awakened the most intense interest and was highly appreciated.

The reading of papers being in order, the President called upon Dr. Hart, who informed the convention that he was under the impression that he was to read at the annual meeting. Dr. J. C. Michener then offered another of his thoroughly practical presentations, bearing upon "Parturient Apoplexy,"¹ with a record of the last seventeen cases treated. It was full of strong practical aspects and measures of treatment, and enjoyed by all. Dr. Francis S. Allen then presented a well-prepared paper on "Acetanilid,"² with numerous diagrams showing its results in high temperatures. The paper exhibited great care in its preparation and records of personal experience with the drug of much value. Dr. James T. Ross's paper on the "Management of Parturient Apoplexy Homœopathically" was read by the Secretary, and was an additional contribution to the widely adopted general plan of the administration of small doses of aconite and belladonna alternately. Dr. Howard B. Felton presented the subject of "Canine Dis-temper"³ in a masterly manner, a wide personal experience with special opportunities giving him unusual opportunities to test the value of the various plans of treatment advocated. It proved a paper of great merit and value, and will be read by everyone interested in canine pathology with great benefit and appreciation. Dr. Jacob Helmer read a thoughtfully prepared and convincing presentation of "Homœopathy and Why I Do Not Practise It."⁴ It was a severe arraignment of this method of medical treatment based upon earnest study, a period of practical experience in its application, and a thorough and deep conviction of its false promises and absurd claims. It will be read by all with much interest, and will strongly

¹ See December number.

² See page 769.

³ See December number.

⁴ See page 759.

"Osteoporosis continues to crop up in all classes of horses, but chiefly in comparatively young animals kept in old and badly-ventilated stables, generally situated on the ground-floor, and without any drainage; about 15 well-marked cases came under my observation, some of which were destroyed and others were disposed of by their owners upon my advice; 2 cases so disposed of are reported as convalescing in other locations and stables.

"Purpura hemorrhagica, pleuro-pneumonia, azoturia, cerebro-spinal meningitis, and colics carried off the usual number.

"Metastatic laminitis following acute indigestion, pneumonia, or influenza, was unusually common this spring, and left quite a number of my patients in such a condition as to render destruction of life advisable.

"The extreme heat of last summer caused very heavy losses in Brooklyn; and dead horses were found on every street, owing to inability of the contractor to remove them fast enough.

"Dr. Ackerman states that of 258 cases reported to the department of health as glandered, farcied, or suspicious, 152 were found to be affected, and accordingly condemned and destroyed. In my own practice probably 30 cases came under observation. The mallein-test was employed in all cases where the symptoms were not sufficiently developed to warrant positive conclusions, and in two stables where glanders had existed for a long time and broke out periodically all animals were tested; those showing a reaction of two degrees or over, and the typical swelling at point of inoculation, were destroyed, and in probably 12 cases where no external symptoms of any description could be detected post-mortem examinations were made and lesions indicative of glanders were found in every case; yet seven horses which had been among a lot of glandered animals for months, and reacted on the mallein-test from three to five degrees, but were otherwise apparently in good health and showed positively not the slightest indication of glanders that could be detected on physical examination, were allowed to live, and have been carefully watched since last March or April, when the mallein injections were made. At this writing, which is six months after the test, five of these animals appear to be in good health and are doing their ordinary work; one was destroyed as glandered some three months ago, and one has been quarantined as a suspicious subject for the last two months. Is it possible that the germs of glanders are lying dormant all these months in those five horses that are to work? Or did the mallein injection have a curative effect? Or is mallein not altogether reliable as a means of diagnosis?

"Dr. Wm. H. Pendry, in his official report to the department of health states that less than 3 per cent. of the 3000 milch cows in Kings County are affected with tuberculosis, as far as can be detected by physical examination, but qualifies this by saying that most all the cows are of the common hardy variety, frequently changed and retained by their owners only as long as they milk well, and, failing in that, are fattened for slaughter. He speaks of tuberculin as a most reliable diagnostic agent for tuberculosis, and advocates in the strongest terms that this test be applied to all dairy-herds.

"Dr. E. L. Volgenau, United States inspector of the Bureau of Animal Industry, examines all cattle killed at the Hudson Avenue abattoirs. He reports that of 2720 head of fat cows and steers examined by him, 12 were affected with generalized tuberculosis in advanced stages, and a very much larger number with localized tubercular lesions. He concludes that fully,

at high altitudes altogether so. Dr. W. L. Williams, of Cornell, spoke of the prevalence of glanders in Russia and other parts of Europe, and finally of the disease on the ranges in Montana, where glanders exists to some extent, and is not only a curable disease, but that mallein treatment to a large degree produces such results, and that upon the plains the disease is not looked upon with that degree of horror as in the East. Prof. Law, speaking a second time, cited a case of glanders in New York City which was treated, making a complete recovery, a similar case in Ithaca, and numerous cases in Wyoming. Dr. Joseph Hughes, of Chicago, contended that glanders should not be treated, but all affected animals destroyed. Dr. John Wende, of Buffalo, said that he saw three colts with glanders and all made a complete recovery. Dr. W. H. Pendry, of Brooklyn, believed that veterinarians should not advocate the treatment of glanders. Dr. Wilson Huff, of Rome, asked to hear from Dr. Peters, of Nebraska, who believed that glanders is curable on the plains, but that treatment should not be attempted in cities, as the disease is best treated in the open air and on pasture.

(To be continued.)

AMONG THE COLLEGES.

NEW YORK STATE COLLEGE.

THE three classes will all have representations at the opening session of the New York State College, at Ithaca. The clinical advantages of this school have been a matter of concern to the profession in general, but it would seem that the clinical facilities of the school promise to attract a wide and varied clinic, to in every way provide for a thorough and efficient course.

PERSONAL.

Dr. H. J. Brotheridge, of Brooklyn, was a recent visitor to the JOURNAL office.

Dr. H. B. Adair received an appointment in the meat-inspection service in the Bureau of Animal Industry, and has been stationed at Milwaukee.

Dr. J. C. Milnes, of Cedar Rapids, Iowa, and Dr. Don Patten, of Hampton, Iowa, have received appointments as meat-inspectors, and have been assigned to duty at Kansas City.

Dr. A. D. Melvin has recently made a tour of the large cities where government meat-inspection is being conducted, his chief purpose aiming to make the inspection at all points as uniform as possible.

PERSONAL.

on the proper care of stock. In his address standing of the veterinary profession in welcome of the U. S. V. M. A. at Buffalo the veterinary profession, and of the people, expressed the hope that the South might accept the invitation to the Association should it hold in that territory.

Prof. Andrew Smith was recently elected Toronto (Canada) County Hunt Club.

Dr. J. Stewart Lacock has just returned Milwaukee, and Cleveland.

Dr. J. C. McNeil, of Pittsburg, Pa., was JOURNAL office.

Dr. R. S. Huidekoper will be the attendant at the live-stock show at the Madison Square Garden 23d to 28th.

Veterinarian A. S. Alexander, of Evansville, judge of Aberdeen-Angus cattle at the live-stock show in New York in November.

Governor Morton has appointed as the new mastershoers of New York State, Veterinarian Thomas Carroll, of New York; the mastershoers, Thomas Carroll, of New York; and as journeymen shoers, A. Grove, of Rochester, and Charles W. Keenan, of Brooklyn; and as journeymen shoers, A. Grove, of Rochester, and Charles W. Keenan, of Brooklyn.

Dr. A. W. Althouse recently brought suit for \$865 for professional services against C. W. Keenan, in the circuit court of Lexington, Ky.

Dr. M. P. Ravenel has been appointed as the new veterinary laboratory of the Live-stock Sanitary Board at the Veterinary University of Pennsylvania.

Dr. S. J. J. Harger, of Philadelphia, has been elected to the Pennsylvania State Board of Veterinarian, though he courageously attended to his duties on October 20th and 21st at Harrisburg, Pa.

GLEANINGS.

THE use of Fowler's or Donovan's solution of arsenic for warts is highly commended in human practice, and might well be tried in equine practice, where these blemishes of the cuticle are very much of an eyesore.

The recent adoption of asbestos as a surgical dressing has one very excellent point to commend it, in that it can be exposed to a degree of heat sufficient to destroy all germ-life.

A band of wild horses, the only ones thought to be in the territories, were recently sighted on the borderlands between the United States and Mexico. They are estimated at about eighty in number.

The purifying of whiskey and elimination of all deleterious matter by electrical process, at a nominal cost, is one of the latest inventions.

A Spanish commission for the purchase of 2000 broncho ponies was recently issued, the ponies to be used in the Cuban rebellion by the Spanish soldiers. We have no doubt of their proving more than satisfactory for such purposes, as they are well adapted for hardship and privation.

The *Poultry-Keeper* recommends the following mixture for lice on fowls and other animals: One and a half gallons of kerosene are soaked through two and a half pounds of pyrethrum (Persian powder), forming a yellow oily extract. Dissolve one pound of soap in one gallon of the extract and churn until thoroughly emulsified. When using, mix one pint of the emulsion with four pints of water.

A silo capable of feeding 350 cows, fifty pounds each a day for three hundred and sixty-five days, has been constructed at Aztalan, Wisconsin.

An ex-army veterinarian failed to transmit strangles, or rhinadenitis, to goats and dogs, with introduction of lancet on which fresh pus was secured. He reports that Indians eating the flesh of animals dying from distemper appeared to suffer no inconvenience therefrom.

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1 c.c. (4 to 5 injections) .	\$1 00	5 c.c. (2 injections) .	\$0 60
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5 c.c. (20 to 25 ") .	4 50	20 c.c. (8 to 10 ") .	2 20
10 c.c. (40 to 50 ") .	8 00	50 c.c. (20 to 25 ") .	5 20
20 c.c. (80 to 100 ") .	15 00	100 c.c. (40 to 50 ") .	9 25
50 c.c. (200 to 250 ") .	35 00	150 c.c. (60 to 75 ") .	13 75
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THE JOURNAL OF COMPARATIVE MEDICINE AND VETERINARY ARCHIVES.

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DECEMBER, 1896.

No. 12.

ADDRESS AT THE INAUGURATION OF THE NEW
YORK STATE VETERINARY COLLEGE,
SEPTEMBER 24, 1896.

BY PROFESSOR JAMES LAW,
ITHACA, N. Y.

(Concluded from page 781.)

But if the mere economic advantage would demand such a step, how much more would be the protection of human health and life? How much of the physical disease and death of man is due to direct transmission from corresponding disease in our domestic animals is only now beginning to be realized.

Among parasites some of the most deadly of man's tormentors come directly from our live-stock: *Trichina*, *echinococcus*, the beef and pork tapeworms, *strongylus gigas*, and *actinomyosis* may be mentioned in this connection. Among microbial diseases the list is no less redoubtable: Glanders, farcy, rabies, tetanus, milk-sickness, tuberculosis, anthrax, malignant œdema, septicæmia, erysipelas, gangrene, and infectious osteitis may be adduced as examples.

The more intimately we acquaint ourselves with the subject of communicable or contagious disease the more deeply are we impressed with the fact that there is the closest relationship and interdependence between these affections as they appear in man and animals. Indeed, in many cases, as in the *echinococcus*, the beef and pork tapeworms, and even the *trichina*, the successive appearance of man and animal as the host of the parasite at the different stages of its development is a condition of its propagation. So far as we know, it is impossible for the

echinococcus or for the beef *tænia* to live in a host of the same genus in both its larval and mature condition. Man harbors the larva and the dog the *tænia*, or the calf entertains the larva and his master the *tænia*.

In the case of contagious affections due to microbes the same alternation from man to beast and from beast to man is not so essential to their maintenance, and yet the intimacy of the relation between the domesticated animal and the civilized man is so close that many such diseases are largely propagated in this way. In this sense glanders and anthrax stand out as largely industrial diseases. The first appear in persons having close relations to horses or to horse-products—grooms, coachmen, stablemen, cowboys, soldiers, farmers, horse-dealers, veterinarians, knackers, surgeons, tanners, gardeners—whose daily vocations lay them specially open to direct infections. The second is a disease of farmers, cattlemen, shepherds, butchers, tanners, hair- and wool-workers. But neither disease is by any means restricted to these classes. These suffer more numerously, but others suffer in a more limited extent through less direct channels of contagion. And the danger of such irregular transmission is in exact ratio with the number of diseased animals that are allowed to survive in a district. A single glandered animal is a source of no great danger. He may even be used on public highways, but his contact with or proximity to man is necessarily somewhat restricted, and the human risk is correspondingly small. But let him have free scope to infect others, and these to infect others in turn, until one can hardly enter a street without meeting an infected animal, and having him snort his deadly nasal discharge over one's person and into one's nose, eyes, and lips, and the danger at once becomes imminent. Let glanders be neglected in a street-car stable until its victims are counted by the score, or on a horse-ranch until the diseased mount up into the hundreds, and the danger, first, to the caretakers, and, second, to the general public, is greatly enhanced, and human victims of this most loathsome and deadly disease become comparatively common. Let a grocer, baker, milkman, or other vendor of human food keep a glandered horse and use it in his delivery-wagon, and the hands of the driver, alternately coming in contact with the virulent discharges and the articles of food, threaten to become a very direct cause of infection to his unsuspecting customers.

A single anthrax animal would also be primarily a source of apparently little danger, but when that diseased subject is allowed to contaminate other animals, and even susceptible soil, which can retain and propagate the bacillus, the danger to both man and beast is enormously increased. Brought up from the graves by the rising of the soil-water in wet seasons, or by the intervention of the earthworm or the burrowing rodent, then dried up and blown by the winds upon the vegetation, drawn up from wells in the drinking water, borne along by streams and rivers to new localities, carried on the feet and even in the stomachs of vermin, birds, and insects, and implanted in the skin by their mandibles and biting apparatus, the bacillus finds many channels of conveyance and numerous modes of infection. Delivered from the butcher's stall into our kitchens the meat of an anthrax animal is liable to contaminate other food, through knives, forks, plates, and other articles, and even to cause direct infection through the resistance of the spore to the heat of cooking.

Of late years the general public has been more exercised over tuberculosis than any other complaint which is common to man and beast. There is doubtless good reason for this. This *white plague of the North*, by far the most deadly affection of man, killing one-eighth of civilized humanity, and attacking one-fourth or even one-third at some period of their lives, is also the most prevalent chronic disease of our dairy herds; and its extension in the human race bears a remarkable ratio to the utilization of the bovine races for dairy products and beef. Piscivorous tribes, like the western islanders of Scotland, are usually remarkably free from tuberculosis, as are also the native Chinese, who are vegetarians. The ruling Tartar race in China, on the other hand, are beef-eaters and largely tuberculous. In Egypt and Algiers, in the comparative absence of bovine herds, the great influx of consumptives has not materially deteriorated the health of the native population; while in Italy, Australia, Hawaii, and Madeira, where the population freely consume the products of the bovine race, the rush of phthisical health-seekers has led to a great extension of tuberculosis among the natives. Among tribes of our own Indians who feed on the raw flesh of the ox, too often diseased, 50 per cent. of the total mortality is from tuberculosis.

Concurrent testimony obtained on so large a scale and from such widely different sources is not to be lightly set aside.

Our own university herd is a standing example of a sound prevention of this infection. Formerly affected with tuberculosis, it has now for a number of years been entirely free from the affection, in spite of many risks, from visitors and otherwise, and in spite even of the presence in the barn, for several months, of a latent and unsuspected case, which had been brought from another herd. Had we left that dormant case in the herd after its discovery, it would in all probability have sooner or later developed into active disease, and become the source of a new general extension of tuberculosis in the herd.

It is impossible in a short lecture to lay down infallible and iron rules for dealing with this or any similar disease under all possible circumstances. Special conditions may warrant special measures. In the case of valuable animals where economic considerations would warrant the supervision, separate herds of dormant cases may be allowed for breeding purposes, if they can be kept carefully apart from all other stock, their milk products denied to man or animals, and all acute cases weeded out from the herd as soon as they can be detected. Above all, if such breeding-herd of dormant cases can be subjected to a continuous out-of-door life on the open prairie, where the chances for recovery are highest and the risks of contagion lowest, they may be made profitable by fattening their healthy progeny for beef, or still more so by the perpetuation of a valuable strain of blood. Under such professional supervision and frequent testing the actually recovered animals could in due time be removed from their still questionable companions and restored to a guaranteed herd.

But the one who would argue from this that the actual, though somewhat latent and dormant, cases should be left in the herd that has been tested and proved to be above suspicion, is but pleading for a free field for the propagation of the contagion. The acute cases that would develop at intervals would entail new victims, no longer among the latent cases and suspected animals only, but among the tested and sound as well.

Under average conditions, with low-priced cattle and a State indemnity, the slaughter of all the tuberculous would be the course of economical and successful sanitary work; and when special condition rendered another and less radical resort permissible, it should only be adopted when hedged about by such precautions as would obviate danger to man and beast.

We know enough about the dreaded tuberculosis to say that

CASE XIV. *August 15.* Eleven years old. Thirty hours very bad in her head; t. short intervals; breathing hurriedly; creolin; gave purgative and one-drachm every hour. Died on second day.

CASE XV. *September 20.* Ten years old. Twenty-four hours; found her upon her calf. Gave her purgative; used 1 on aconite every hour and used stir Much worse. Raised the head and it flies would collect in the eyes and causing slowly and quietly; respiration a minute at a time, occasionally. They were astonished when I proposed going they thought it was doctoring a dead the days of miracles had not yet passed the dead would come to life. Put her ether, and was rewarded the next day head up, looking for something to eat. in half-doses at intervals of three hours as ever.

CASE XVI. *September 24.* Twelve years old. in thirty-six hours; very stupid; put her and used the creolin injections. Grew on the fourth day.

Here we have seven deaths and nine. The first time I ever kept notes of cases, and I would have given a better showing and being about the usual average. The new departure, and I cannot say that the mortems of four of the cases were in congestion of viscera, the lungs in part any lesion of brain or spinal cord; slight noid space in two of the cases.

TINCTURE of iodine in the drinking-water, with a pound tincture of cinchona-bark, will be effective in cases of diabetes insipidus occurring following too severe work when convalescent from fevers incidental to transportation.

as well as the practical veterinarian—one is at sea without the assistance of the other. It was through the standing shoulder to shoulder of our old curators, some of whom were practical, others theoretical, that has placed our profession where it stands to-day. They studied your interests in the past; they are doing the same to-day in endeavoring to raise the standard of our profession, so that it may in the not far-distant future take the stand I think it is evidently destined to take—that of the foremost rank in the science of medicine.

We are only in the infancy of our existence, so to speak. The offices we as experts in the diseases of animals will be called upon to fill in civil, military, and national affairs are many, and to-day only commencing to be created. Let us, therefore, qualify, so that selection for the position we are called upon to fill will be because of exceptional ability, and not because of fitness to toot a horn in the band-wagon of national affairs, if I may so express it.

A PECULIAR CASE OF HYBRIDISM.

REPORTED BY DR. CECIL FRENCH,
WASHINGTON, D. C.

MR. OYETTON, student of the United States College of Veterinary Surgeons, brought here two specimens with the following history:

A mongrel cat lived and fraternized with a half-wild rabbit in a back-yard. In the course of time the cat, which was the female in the case, became possessed of two offspring. At six months of age they were about the size of a large kitten, apparently totally blind. Head showed predominance of cat, ears pink, teeth feline. They were very wild, would meow, and feces were like those of a cat. Hind-limbs, especially in the gait and tail, resembled a rabbit. Hair was rabbit-like. Hopped like a rabbit. Carnivorous in diet. There appeared to be some nervous affection, as they continually shook their heads from side to side.

The *Horseshoers' Journal*, in its new dress and under its new managerial direction, makes its appearance with the November number with the best of promises in fulfilling a stronger place of usefulness for the craft.

merit system, by which veterinary service will be raised, its value to our Government enhanced, the compensation made more adequate, and the need of an increased service made more evident, and thus every honest line of our profession advanced. Never was a more pernicious system destroyed; never a more disgraceful method of filling public place eliminated. Surely we have all suffered enough from its baneful results, and should henceforth lift up our voices and our influence against the rehabilitation of the infamous spoils system. No temporary abatement of its wise provisions should be tolerated by the incoming administration without bringing down upon itself the most scornful reproach of every good citizen and of every true veterinarian. SUSTAIN THE PRESENT SYSTEM!

OUR BUFFALO RESOLUTIONS ON TUBERCULOSIS.

EVERY veterinary organization in the land would do well to take up at the earliest opportunity the resolutions adopted by the United States Veterinary Medical Association at Buffalo, and, after thorough consideration, place themselves on record in their communities. These resolutions go right to the root of the whole subject, and are conservative in every direction where conservatism is justified. They are broad in the highest aspect of the subject from a veterinary and sanitary point of view, and they should be given the utmost publicity throughout the land. They were adopted unanimously at Buffalo by the largest and most representative convention of veterinarians ever assembled on this continent, embracing delegates from the United States and Canada, and these will do more to advance the movement for wiser laws for the control of *this disease*, when studied by an enlightened public, than any expression of views on this subject uttered during the past ten years. Advance the movement!

"BACTERIOLOGY in its Relation to Veterinary Science," will be the subject of an address by Dr. M. P. Ravenal, Bacteriologist of the Pennsylvania State Veterinary Sanitary Board, at the meeting of the Keystone Veterinary Medical Association on December 8, 1896. An invitation is extended to all veterinarians to be present.

NECROLOGY.

THE death of Edwin Willits, A.M., LL.D., Lecturer on Medical Jurisprudence at the National Veterinary College, Washington, D. C., removes a strong friend and supporter of this school, and ends a well-lived and useful life, at a time when the value of his long years of faithful service in advancing agriculture in the broadest acceptation of that term was of the greatest worth and most sorely needed in the history of our country. Dr. Willits had filled well the posts of President of the Agricultural College of Michigan, thrice representing his home district in Michigan in the lower branch of Congress, and Assistant Secretary of Agriculture under Hon. Jeremiah Rusk, and continued for a time under Secretary Morton. His interest in the advancement of veterinary science was a matter of great pride, and his recognition of its value to the prosperous growth of agriculture such as to make his value as a teacher of much importance.

MARRIAGES.

AT Montreal, Canada, September 23d, Dr. Cecil French, of Washington, D. C., was united in marriage to Miss Florence Day, second daughter of the late Mr. Edwin T. Day, barrister, of the city of Montreal, Canada. A trip, including many of the Eastern cities, followed the wedding breakfast and their return to Washington, Dr. French's home, where they expect to at once take possession of their new residence in the suburbs of the Capital city.

Harri H. Dell, of Sullivan, Illinois, graduate of McGill University, Class of '96, and former Secretary of the Montreal Veterinary Medical Association, was married September 30th to Miss L. E. Estelle Ratliffe, of Farmer City, Illinois.

October 14, 1896, at Broomall, Delaware County, Pa., by Rev. J. M. Keller, rector of St. David's Church, Dr. W. L. Rhoads, of Lansdowne, Pa., to Miss Anna M. Moore, of Broomall.

On October 27, 1896, at Haverhill, Mass., at the Trinity Episcopal Church, by the Rev. D. J. Ayers, Dr. John M. Parker, President of the Massachusetts State Veterinary Medical Association, and a member of the State Board of Cattle Commissioners, was married to Miss Edith Helen Snell. After the ceremonies the couple were driven to their new home, where a wedding lunch was served and a reception held.

CONTROL WORK.

Australia. The prevalence of cattle-ticks in this country is causing deep concern among the owners of live-stock, and they are reaching out for methods for their control and extermination.

Jamaica. The disease recently investigated by Professor W. Williams is reported by him to be in character that of Texas fever, assuming a chronic form, transmitted from animal to animal and from place to place by ticks. Great depression, languor, debility, and indifferent appetite, loss of rumination, emaciation, exceeding paleness of the visible mucous membranes, diarrhoea, pulse from 65 to 120 per minute, urine pale and containing but a small amount of albumin, breathing disturbed, shrunken appearance, and staggering gait. In the past two years two thousand cattle have died. For stamping out the tick plague stringent quarantine regulations, and, for a time, prohibition of all importing of animals to the island, were recommended by Williams.

Indiana. While tuberculosis seems quite prevalent through this State the appropriation to the Live-stock Commission has been cut down to \$4000, a meagre allowance for such important work, and an exhibition of false economy that ranks well with the action of the legislators in the Empire State at their last session. There will be a rude shaking up in this matter in the near future in these States, and the losses to those engaged in animal industry will be a sad reflection on the intelligence of their lawmakers.

Pennsylvania. Some opposition to destroying tuberculous cows has arisen among the farmers of Montgomery County, adjacent to Philadelphia, where the milk is sent. As the Philadelphia press, in general, is clamoring for a purer milk-supply and rapidly educating the public, the agitation will work much good for the eradication of the disease in this section.

A Bucks County herd of 68 revealed 17 tuberculous animals and 2 suspicious ones in which the temperature was high, but not decisive.

Twenty-one head of thoroughbred cattle from Fayette County were recently destroyed at Pittsburg, and found to be much more seriously affected with tuberculosis than was indicated by the examination and tuberculin-tests applied.

New York. In the northern part of New York City, out of a herd of 139 cows, 27 were found to be tuberculous when tested. Most of these animals were from one herd, which had been supplying with milk the New York Juvenile Asylum and the New York Institution for the Instruction of the Deaf and Dumb. No more serious state of affairs could exist than to learn that public institutions of a charitable character were being supplied with milk from such dangerous sources, and it must be evident by this time that the first work for every State in the Union to do is to investigate this source of food-supply for the inmates of all public institutions. It is reported that the health department of New York City will undertake at once the prevention of the sale of tuberculous milk brought into the city from any source whatever. This means, of course, an examination of all the herds supplying the city with milk.

Vermont. Governor Grout received among the first bills sent him one relative to tuberculosis. It provides that the State Board of Health be instructed to examine the condition of ventilation and sanitation of stables in which cattle are kept, to provide for a series of experiments to be conducted at the experiment station at Burlington, Vt., investigating the possibility of recovery of infected cattle, results of such investigations to be published. After December 1, 1897, no indemnity to be paid for cattle condemned unless it is ascertained that such stables had been previously placed in condition to resist infection and dissemination.

Massachusetts. Secretary Sessions, of the State Board of Agriculture, replying to a question as to the value of Prof. Bang's method for the eradication of tuberculosis as adopted in Denmark, replied that the present state of public opinion here would not permit the sale of milk or dairy-products from animals even slightly affected, and hence it would not pay to keep such animals unless they were exceptionally valuable. The present system of testing and immediate slaughter is radical and quite expensive to the State, but it is doubtful whether if any half-way measures would be wise or effective in combating so great a danger.

Illinois. Drs. Burrill and McIntosh, of Champaign, are investigating an outbreak of disease, of a very fatal character, among the hogs in Champaign County. Those that have died are said to have been inoculated with the Detmer hog-cholera cure.

CORRESPONDENCE.

WASHINGTON, D. C., November 24, 1896.

FELLOW-MEMBERS OF THE AMERICAN VETERINARY PROFESSION:
An opportunity has been kindly offered us by the Pasteur Monument Committee of France to contribute to the memorial fund which is now being raised. No one can appreciate more truly than the veterinarian how much Pasteur did for our profession and for humanity, and no other profession can feel a deeper interest in the success of the American subscription. Up to this time the veterinarians of our country have done nothing toward this object, because the subject has not been properly brought to their attention. I now appeal to every member of our profession to contribute something to this fund. Whether it be one dollar or ten dollars, it will testify to the sentiments of the giver and will assist in swelling the funds which we hope will creditably represent the great country in which we live. All contributions should be sent by draft or money order to Dr. E. A. de Schweinitz, Secretary Pasteur Monument Committee, Cosmos Club, Washington, D. C., who will duly receipt for the same. The subscription must be closed by February, and the Paris Committee desires an estimate within a month of the amount that will be contributed in order that the work on the monument may be commenced. Will you not aid the Committee and sustain the reputation of our profession by acting promptly and liberally in this matter of international interest?

D. E. SALMON,

Chairman of the Committee on Pasteur Memorial Fund of U. S. V. M. A.

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A NEW YORK city paper of recent date states that Dr. R. S. Huidekoper, veterinarian of the New York College of Veterinary Surgeons, was instrumental in having a warrant of arrest issued and served upon a party practising as a veterinarian in that State without the proper credentials, contrary to law. I am but a veterinary student, and, if allowed space to express my humble opinion, will say that I am glad to see one man with the undaunted courage and respect for the laws of the State and veterinary society to openly stand up and protect them and the legal veterinary profession. This also encourages the student,

who after expending time and money for a collegiate education, as a general rule, graduates only to find that he has a hard and bitter fight to wage with the unscrupulous empiric of to-day.

A STUDENT.

EDUCATIONAL.

COLORADO will be among the States that will ask in behalf of her veterinary profession legislation looking to their proper recognition. They are organized for the battle, and will earnestly press for success. A draft of a bill has been approved by the Colorado Veterinary Association at a recent meeting.

Live-stock judging is taught at the Wisconsin Agricultural College at Madison.

The relative value of the meat of open heifers, spayed heifers, and steers is the subject of an interesting bulletin from the Iowa Experimental Station, and the injustice of price done heifer-meat in the market fully exposed.

The Ohio Dairy School at the State University has as a portion of the course breeds, breeding, feeding, and diseases of dairy-cattle.

A leading periodical of Berlin, Germany, denies that it is the intention to prevent the importation of canned meats.

The new building for the department of veterinary surgery of the Detroit College of Medicine will be completed in two weeks. When the building is finished and the department removed from the old building on Beaubine Street, where now located, the students of the veterinary department will be as well provided for the study of diseases of the domesticated animals as the students of the medical department are now provided with the means of studying the diseases of the human family. The new building is back of the Detroit Medical College building on Mullet Street, a handsome four-story structure with graystone finishing. The entrance is on Mullet Street between a pair of graystone pillars, and leads by a flight of stairs to the first floor above the basement. Upon the left-hand side of the long hallway that traverses the building longitudinally is the humane agent's office. Upon the right side is the office of the College of Veterinary Surgery. Upon this same floor are bed-rooms

for those in charge of the reading-room and library, a private laboratory, and lecture-room. The second floor is to be used for laboratories and the other departments of the college. To the right of the building a wide driveway leads down to the basement entrance. The driveway is so arranged that the horse-ambulance can be driven right through the basement of the wing that projects to the right of the main building. In this wing are located the operating- and dissecting-rooms of the veterinary college. In the operating-room is a forge that will be used in demonstrating practical horseshoeing to the class; also all the necessary appliances required in operative surgery. The infirmary is finished in hardwood, with cement floor; hot and cold water, steam-heat, and electric lights.

Dr. Robert Ward, of Baltimore, late State Veterinarian of Maryland, proposes to give a series of lectures in November and December on "The Structural Anatomy and Conformation of the Various Breeds of Horses and their General Management in Health and Disease," and a special course for horse-shoers, treating on the foot. Fee for the course, ten dollars.

USEFUL FORMULAS.

For irritable eczematous eruptions the following prescription has been found very useful in canine practice by Dr. Cecil French:

R.—Sulphuris sublimati	℥iv.
Olei picis liquidæ	℥viii.
Camphoræ	℥j.
Saponis viridis	℥iv.
Alcohol	℥viii.
Aquæ calcis	Ojss.—M.

For mange (sarcoptic) add oil of cade ℥iv to the above.

For severely inflammatory, irritative, rheumatic eczemas, which alternate with true rheumatoid lameness, prescription No. 2 is preferable when accompanied by proper internal treatment:

No. 2.

R.—Acid. boric.	℥i.
Acid. carbolic.	℥ij.
Glycerin. }	
Ext. hamamel. fl. }	āā Oj.—M.

Add to the above ℥ij to ℥v menthol dissolved in sufficient alcohol.

For Eczema in Dog (Dr. Gill).

Talcum	}	. . . . .	ââ	100 parts.
Amyl (starch)				
Glycer.	.	.	.	40 "
Aq. plumb.	.	.	.	100 "
Sol. acid. boric. (2 : 100)	.	.	.	100 "

Formula of Periostine (Sweat Blister).

Iodine	3x.
Kali iodid.	3iv.
Camphor	3ij.
Wood alcohol	3viij.

Apply with camel's-hair brush.

For Distemper.

Magn. sulphas	3ij.
Kali chloras	3ij.
Liq. ammon. acet.	3iv.
Spts. ether. nitros.	3iss.
Fl. ext. bellad.	3j.
Oxymel	3iv.
Aqua	ad Oj.—M.

Sig.—If high temperature, give the above three times a day, reducing dose as fever subsides; later tonics or stimulants may be added.

Solution for Preserving Brain and Upper Cord.

Corrosive sublimate	60 parts.
Salt	120 "
Acet. acid	120 "
Water	2000 "

Best Preservative Fluids.

Saturated solution of *pure* corrosive sublimate in water.

Formaldehyde, 2 per cent. solution in water. (Formalin is a 40 per cent. solution.)

Alcohol 95 per cent.

Whiskey and brandy varies from 40 to 60 per cent.; ordinary alcohol is about 50 per cent. Nothing less than 95 per cent. is worth using.

Sublimate is the cheapest; formaldehyde keeps the color of the specimen best.

No other preservative fluid worth any consideration. It is not worth while to attempt to save specimens which have become putrid. Enough fluid should be added to cover a specimen completely.

IMPORTANT veterinary meetings: Schuylkill Valley, at Pottsville, Dec. 16, 1896; Niagara and Orleans County, at Niagara Falls, January, 1897; Virginia State Association, at Staunton, Jan. 8, 1897; Colorado State Association, at Denver, Jan. 5, 1897; Chicago Veterinary Society, Dec. 10, 1897.

SOCIETY PROCEEDINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

WHAT proved to be one of the most pleasant and instructive meetings ever held by the Association was called to order by President John R. Hart, Tuesday evening, October 13th, with the following members of the profession present: Drs. Francis S. Allen, H. A. Christman, C. M. Cullen, Charles T. Goentner, John R. Hart, W. Horace Hoskins, Charles Lintz, Thomas B. Rayner, and W. L. Rhoads.

After the reading and approval of the report of the September minutes, the Chairman of the Committee on Certificates reported the progress of a most diligent search for the original minute-book of the Association that they might have the correct date of its organization placed on the membership certificates.

Dr. H. J. McClellan, having given up the profession of veterinary medicine, tendered his resignation to the Association, which was read and referred to the Board of Trustees.

Dr. Hoskins then read an interesting paper entitled "Some Aspects of Association Works and Aims," in which he urged the necessity of a closer union of the profession at this time when we are so ill-prepared to stand alone as individuals; further than this, we need to foster a closer affiliation with our brother profession, that of human medicine. He spoke of the great danger to our own welfare and prosperity by the establishment in our midst of great marts of trade toward which every channel of trade seems to run. As a rule, their influences are not for the general good. He cited an instance where there had been concentrated under one roof the business of fifty or more individual houses, thus losing to the community the value of a number of good and efficient men. To the acute observer this means a loss to the manufacture of drugs and chemicals, as well as the retailer and dispenser, also the carriage-builder, the harness-maker, the shoer, etc., *ad finitem*. Undoubtedly the strength of our Association circles first brought before the people the advantage of civil-service reform, and, after thoroughly enthusing them on the subject, has year by year gradually raised the standard of such examination till now, not the politician, but the proficient professional man is most sure of his position. Thus the Association is an incentive to all to keep moving toward the top. The reading of this paper, which, by the way, was up to date, was listened to with great interest, and evidently thoroughly digested by each one fortunate enough to hear it.

The first of the half-hour talks arranged for this season's entertainment was by Dr. J. Cheston Morris, "On Some Statistics of Dairy-products and Thoughts Thereupon; Personal Experience in the Proper Preparation of Milk for Sale in the Markets and the Value of Separator-products of Milk." This, though looked forward to with great interest, was to all a most delightful surprise, as it was, without doubt, the most thoroughly comprehensive and instructive talk on this or kindred subjects ever given before the Association. Dr. Morris spoke of the superiority of Devon cattle for the produc-

tion of milk to be used in its natural state, as due to its relative proportions of butter-fat, casein, and sugar being the same, or nearly so, as those of human milk, as shown by the many thousands of analyses made and published by the Aylesbury Dairy Company and the society of chemists in Great Britain; from these we may gather that Jerseys and Guernseys yield a milk relatively rich in fat, but poor in casein and sugar. Short-horns, Ayrshires, and Holsteins a more watery fluid, rich in casein, but relatively poor in butter-fat and sugar; while Devons give milk nearly as rich in fat as the Jersey, and in casein as the Ayrshires, and richer than either in sugar. While the fat in a finely-divided natural emulsion is most useful and necessary in cell-growth, we are apt to overvalue it and disregard the active agency of milk sugar, which, by its splitting into lactic acid in the digestive processes, causes the chemical changes in the phosphates and albuminates on which tissue-building and nutrition so largely depend. Hence the superiority of Devon milk, as shown in practical results. Skimmed milk yields a hard curd, difficult of digestion. The curd of cow's milk being more dense than the light, flocculent curd of human milk, in artificial feeding we use sugar or starchy material to make the curd more porous or spongy. The milk of the buffalo, goat, and ass illustrates the same truth. Lehman says a cow properly fed should yield 1 per cent. of her weight. The statistics kept by Dr. Morris (and they are certainly most complete and exhaustive, each sheet showing name, herd-book number, when dropped, when she calved, sex, color, and any peculiarity of calf, what became of it, if kept or sent to the butcher, when she comes in profit, the number of pounds of milk given each night and morning, when she is served and when due, her price and any peculiarities of her conformation, etc.; these sheets, being carefully filed, give a complete life-history of each cow and her offspring) show that his cattle, which weigh from six to eight hundred pounds, have averaged him five-and-a-half times their weight, or about 3500 pounds of milk yearly (a most conservative estimate), on a feed of hay, corn-fodder cut green and mixed with hominy, bran, potatoes, and beets. He explained the method of the Devonshire people for raising cream and making butter, the sweet skimmed milk being fed to the calves. He has tried this process, but is now using a hand-separator, with which recently he obtained over four quarts of cream from twenty-eight quarts of milk (one pound of butter from seven quarts of milk), which he can use more profitably for calves than for pigs. After the talk Dr. Morris expressed a willingness to answer any questions put to him. He was kept busy for the next half-hour, being questioned relative to almost every stage and era of dairy-breeding and farming. Yet in every instance he was fully prepared, showing his great interest in and love for this work. In answer to some of these he described Guenon's system for selecting milkers by their markings—known as the scutcheon. He is in favor of inspection not only of the cattle, but of attendants and those who handle milk, claiming a tuberculous milkman may do more harm than a great number of tuberculous cattle. This examination should extend not only to the health of the cattle, but to their cleanliness and care of stables, milk-houses, etc. This examination should be made frequently and without warning. He felt the general average of health might be improved by proper food; also that the Danish method of separating tuberculous cows and using their milk after boiling to raise their own calves has been shown to be perfectly safe and successful, thus rendering wholesale slaughter unnecessary, and

might be done without entailing a great loss. He figures it now costs four cents per quart to raise milk with hay at fifteen dollars per ton.

Dr. Rhoads now moved that in recognition of the great value of this talk to those present, and in consideration of the benefit his attendance and fellowship would be to us, that he be made an honorary member; this was seconded by Dr. Hoskins, and unanimously voted upon. The hour being late, election of officers was postponed till the November meeting.

W. L. RHOADS, D.V.S.,
Secretary.

CHICAGO VETERINARY SOCIETY.

ON August 7, 1896, a preliminary meeting was held by five Chicago veterinary surgeons to consider the advisability of organizing a society of qualified veterinarians for Chicago and Cook County. On due consideration the idea seemed a good one. One of those present was appointed Secretary, with the request to send notice to all qualified practitioners in Chicago to attend a meeting at the Sherman House, and that the meeting be held one month from that day.

September 9, 1896. On count it was found only eleven practitioners had responded out of a possible eighty-two. They were requested to agitate the question of a society, and each one bring another with him at the next monthly meeting.

October 13, 1896. On count it was found that thirty-three practitioners had presented themselves for membership. A paper was read by Dr. R. G. Walker, Chairman, setting forth the benefits to be derived from a society of qualified men; that such a society might possibly aid the State Association in their fight for legislation; that it might aid veterinarians in securing city positions, such as milk-inspectors and on general dairy-inspection, which properly belong to veterinarians, and also for mutual advancement, as well as allaying petty professional jealousies.

On motion that officers be elected for the Society, the following were elected for one year: Dr. R. G. Walker, President; Dr. O. E. Dyson, First Vice-President; Dr. James Henderson, Second Vice-President; Dr. J. G. Fish, Third Vice-President; Dr. L. Campbell, Secretary; Dr. G. E. McEvers, Treasurer; Drs. Joseph Hughes, Robert Gysel, and L. A. Merillat, Censors. On motion, these gentlemen were elected unanimously.

On motion, the initiation fee was fixed at one dollar, and dues at one dollar per year. Seconded and carried.

Motion being made and seconded, the President appointed three members to draft the by-laws and constitution, same to be ready for the first reading at the next meeting.

A motion that the Society be called the Chicago Veterinary Society was carried.

October 31, 1896. A special meeting was called by the President for the purpose of reading the by-laws and constitution. On count of the members present at roll-call it was found that twenty-two had responded. The by-laws were read, and the meeting adjourned to meet again at the Sherman House on Thursday, November 12th, at 8 P.M., for the re-reading of the by-laws and constitution.

A meeting of the Society was held November 12, 1896, at the Sherman House. On roll-call, fifteen members present. *Seven* new members were admitted at this meeting. The minutes of the last monthly meeting were read and approved by the Society. This being the last reading of the by-laws and constitution, it was moved and seconded that no new members should be allowed to register as charter-members after this meeting.

The by-laws and constitution were then read by the Secretary; after quite a discussion on some of the sections, with some few corrections, a motion was made by Dr. Gysel, seconded by Dr. Henderson, to adopt the by-laws and constitution; carried.

On motion, the meeting adjourned to meet the second Thursday in December, at the Society's rooms, at 8 P.M.

Charter-members: Robert G. Walker, M.D.C.; J. Henderson, M.R.C.V.S.; George E. McEvers, V.S.; James G. Fish, D.V.S.; J. G. Hope, M.D.C.; John W. Foster, M.D.C.; Albert C. Worms, M.D.C.; Ernst Jentzsch, M.D.C.; J. H. Pear, M.D.C.; L. Campbell, D.V.S.; Robert A. Gysel, M.D.C.; James Bond, D.V.S.; P. Quitman, D.V.S.; S. S. Baker, M.D.C.; J. L. Siegroesser, M.D.C.; Charles Roberts, D.V.S.; Joseph D. Tuthill, M.D., V.S.; B. A. Pierce, V.S.; Olof Schwarzkopf, V.S.; Jos. Hughes, M.R.C.V.S.; L. A. Merillat, V.S.; M. H. McKillip, M.D., V.S.; A. H. Baker, V.S., M.D.C.; C. A. White, M.D.C.; Samuel E. Bennett, D.V.M.; J. J. McGrath, M.D.C.; C. G. Nelson, M.D.C.; J. F. Ryan, D.V.S.; James Flemming, V.S.; O. J. Lanigan, D.V.S.; J. F. Black, V.S.; William H. Broderick, M.D.C.; A. E. Flowers, M.D.C.; C. E. Sayre, M.D., D.V.S.; R. H. Tracy, D.V.S.; James McBirney, D.V.S.; A. R. Wake, V.S.; H. W. Hawley, D.V.S.; H. Johnson, D.V.S.; A. E. Rishel, M.D.C.; F. J. Leith, D.V.S.; W. J. Stewart, V.S.; Jacob Berner, D.V.S.; E. L. Quitman, M.D.C., V.S.; B. A. Pierce, V.S.; C. H. Zink, D.V.S.; John Casewell, M.R.C.V.S.; L. Clark, M.D.C.; J. B. Clancy, M.D.C.; James Robertson, D.V.S.; F. H. Davis, M.D.C.—
Total, 51.

LAWRENCE CAMPBELL,

Secretary.

NIAGARA AND ORLEANS COUNTY VETERINARY MEDICAL SOCIETY.

A MEETING was held at Medina, New York, August 18, 1896, Dr. Martin in the chair. Members present: Drs. Martin, Stocking, Thomson, Hunter, Kesler, Williams, Moore, and Crowforth.

Minutes of last meeting read and approved. Report of the By-laws Committee was received and ordered laid on the table until later in the meeting. Moved and seconded that the organization be known under the name of the Niagara and Orleans County Veterinary Medical Society; carried. Moved and seconded that the Secretary procure a copy of all laws pertaining to veterinary practice enacted since 1886, and report at next meeting; carried. Moved and seconded that the Secretary, Dr. J. P. Thomson, act in concert with the Committee on By-laws, to confer with Dr. Hinkley, and draft by-laws to submit at the next meeting; carried. Moved and seconded that the amount of initiation fees and dues be left blank until the Secretary investigate into the cost of printing by-laws and certificates similar to that of the New York State Veterinary Medical Society. Moved and seconded that

we adjourn to meet at the call of the Secretary between the 1st and 10th of October, at the Niagara House, Lockport, New York, at 1.30 P M.; carried.
Meeting adjourned.

J. P. THOMSON,
Secretary.

At the meeting of the Niagara and Orleans County Veterinary Medical Society on the 9th of October, the further consideration of the adoption of a constitution and by-laws were considered, after which the meeting adjourned to convene at Niagara Falls in January, 1897.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE twenty-second annual opening meeting was held in the library of the Faculty of Comparative Medicine on Thursday evening, October 8th, the Hon. President, Dr. D. McEachran, occupying the chair. Dr. Charles McEachran was also present. Dr. McEachran, in his opening remarks, spoke of the great value of such societies to the student and to the profession in particular. He then resigned the chair in favor of the retiring President, Dr. Baker.

The business of the evening—viz., the election of officers—was then proceeded with. Dr. Baker was re-elected President and the following gentlemen to the various offices named: Dr. Mills, First Vice-President; Dr. C. McEachran, Second Vice-President; Dr. Thurston, Librarian; B. A. Sugden, Secretary and Treasurer. Eight new members were added to the roll. After other routine business had been completed the meeting adjourned.

The second meeting was held in the library, Thursday evening, October 22d, the President, Dr. M. C. Baker, occupying the chair. There was a good attendance of members.

The Secretary was instructed to obtain Metchnikoff's *Researches on Comparative Inflammation* and Dr. Clement's work on *Past-mortems* for addition to the library.

Mr. W. B. Wallis than reported a case of "Parturient Apoplexy in a Cow," rendered more interesting by the subsequent occurrence of subcutaneous emphysema, which he attributed to some traumatism of the lung-tissue, which accords with Zeigler's theory, in which he maintains that the condition may occur by the passage of air through a wound in the lung-tissue, and extension by way of the lymphatic and connective-tissue spaces to the subcutaneous tissues. In the discussion that followed some interesting facts as to the treatment of milk-fever were brought out. This case made a good recovery under strychnine and stimulant treatment. The President pointed out the ample field for research which this disease presented to students. Dr. Martin, in his remarks on emphysema, showed that in the human subject the condition was mainly of microbic origin, being due to certain air-forming bacilli.

Dr. Burns then read a paper on "Nursing and General Management of the Sick." After touching on the important points in connection with this subject, such as pure air, scientific and rational methods of feeding, etc., he went on to show how seldom these fundamental principles were put into practical execution in veterinary medicine. At the close of his paper Dr. Burns illustrated by means of diagrams several plans of ventilation and drainage which he had personally observed in some of the large cities in the United States. One of these consisted of an air-shaft

which ran all round the stable above the stalls and boxes, and over each stall and box were apertures in the shaft which could be opened and closed at will, according to the condition of the patient occupying the space below. Dr. Martin pointed out that a large proportion of veterinary cases were due to irritation of the gastro-intestinal tract, caused by irregular and improper feeding. As regards the training of attendants, the President laid great emphasis upon the value of precept and example, and, in giving the benefit of his experience concerning the temperature of stables, recommended one of from 50° to 55° during the winter months.

The essayist for the next meeting having been notified, the proceedings terminated.

A meeting was held in the library of the Faculty of Comparative Medicine, Thursday evening, November 5th, Dr. Mills occupying the chair, and Drs. D. McEachran, Baker, and Charles McEachran being also present.

There being no business the chairman called upon Mr. Hilliard to report his case. This was one of "Lithotomy," performed on an aged gelding, in which a calculus, loose in the bladder, had been diagnosed, causing frequent attempts at urination. Owing to the size of the obstruction, which proved to weigh 1700 grains (about the size of a hen's egg), the following operation was performed: An incision was made through the perineum down and into the urethra; but on bringing the obstruction to the neck of the bladder by means of the forceps and the hand introduced into the rectum, it was found to be too large for removal. An incision was therefore made in the neck of the bladder by means of a concealed knife, after which the calculus was withdrawn without difficulty. Slight hemorrhage followed the operation, but, an injection of cocaine having been given, the animal evinced but little pain, merely arching his back during the passage of the stone, and eventually made a good recovery.

Mr. Connelly followed with a paper on "Influenza," tracing its history from the time when it was recognized as an epizootic among the war-horses of Rome, and later, in 1776, visiting America, where it has existed up to the present time. Horses about the age of four or five years are most liable to an attack, one of which is supposed to give immunity from others. A period of incubation of from five to seven days occurs before any symptoms present themselves, after which they may be so slight as to attract but little attention, but, on the other hand, are most frequently serious, and present the appearance of rapidly developing fever with marked depression, and when accompanied by grinding of the teeth a severe attack may be expected, the temperature occasionally rising to 107° F. in the first twelve hours. The conjunctiva is oedematous, and this, with excessive lachrymation, has given rise to the name of "pink-eye." The disease may terminate rapidly and favorably or complications of almost any organ may ensue. In the former case the duration does not exceed from four to eight days. Treatment: While the appetite remains the patient should have a moderate quantity of fresh clover, if it be obtainable, warm bran-mashes, boiled oats, or linseed meal. Clothe the body and extremities, and place the animal in a well-ventilated, loose box. Antipyretics are indicated. Bleeding is questionable treatment, and if ever employed it must be at the outset of the disease. Steaming the head is good practice, as it relieves the cough and nasal discharge. When much debilitated stimulants should be used, and in connection with a weak heart

digitalis has proved advantageous. In the discussion which ensued the following interesting points were mentioned by Dr. D. McEachran—namely: That complications affecting certain organs were generally due to some previous disease of said organ having left it in a weakened condition and therefore predisposed to disease. In all cases there is cellulitis and thickening of the membrane, and the doctor mentioned that in his opinion the disease was doubtless of microbic origin, the specific germ of which he was sure would ere long be demonstrated. Dr. Baker pointed out that in differential diagnosis between an ordinary cold and influenza one should take into consideration that in the latter case great depression is present, and that a large number of animals are similarly affected without any apparent cause. He recommended as treatment the administration in the drinking-water of one drachm of nitrate of potash and one ounce of magnesium sulphate three times a day; as a sequel he described swelling principally of the flexor tendons accompanied by shifting or rheumatic lameness. Dr. Charles McEachran drew attention to the general occurrence of roaring as a result of influenza, it probably being due to an enlarged condition of the bronchial lymphatic glands interfering with the function of the left recurrent laryngeal nerve, and pointed out the importance of this circumstance as regards a certificate of soundness, which he recommended should not be given without modification during the first three months following influenza.

The proceedings then terminated.

B. A. SUGDEN,
Secretary-Treasurer.

VETERINARY MEDICAL SOCIETY OF NEW YORK COUNTY.

THE regular monthly meeting was called to order Wednesday, November 4, 1896, at 8.45 P.M., by the President, Dr. Huidekoper, at the Academy of Medicine. On roll-call the following members responded, viz.: Drs. Delaney, Ellis, Foy, Giffen, Gill, Huidekoper, Hanson, Jackson, Lamkin, MacKellar, Neher, O'Shea, and Robertson. The minutes of the previous meeting were read, and, after slight correction, approved.

Dr. Gill, Chairman of the Board of Censors, reported favorably on the names of the gentlemen who had applied for membership, but, owing to a slight error in the form of applications, the chair directed that the names be withdrawn for action until the application be presented in proper form. The board also recommended to the Society that the Secretary be authorized to notify all members eighteen months in arrears that if said arrears were not settled by the next meeting their names would be dropped from the roll. Moved and seconded that the report be accepted; carried.

Dr. Gill reported a case of "Osteoporosis," which was followed by an interesting discussion, opened by Dr. Hanson and participated in by Drs. Neher, Robertson, and others.

Dr. Giffen next reported a case of "Hemorrhage from the Lungs in a Horse," with recovery, followed by a relapse ten days later, which resulted in death ten minutes from time of attack. This case was freely discussed by Drs. Robertson, Gill, Neher, and Hanson.

Dr. Robertson then reported a post-mortem which revealed a case of "Osteo-sarcoma," which he had not had the opportunity of seeing alive; but which had been diagnosed as a case of pharyngeal paralysis. A very interesting discussion by Drs. Gill, Hanson, Jackson, and others followed.

Dr. Gill next reported a case of "Prolapse of the Vagina in a Bitch," and Dr. Jackson a case of "Fracture of the Facial Bones," due to a runaway.

Dr. O'Shea, Chairman of the Judiciary Committee, reported that the committee had a warrant out for one illegal practitioner, to be served as soon as they can locate his present abode, and that they have other cases on which they are going to proceed immediately, and that in reference to the case of compelling a practitioner to remove an assumed degree from after his name the committee would consult the Association's counsel before proceeding. Moved and seconded that the report be accepted; carried.

Dr. Robertson, Chairman of the Board of Health Question, asked permission to report progress, promising to have a written report for December meeting. Moved and seconded that the report be accepted; carried.

Resolutions offered by Dr. Hanson and signed by Drs. O'Shea and Gill: That an amendment be made to Article IV. of the Constitution, in reference to annual election of officers, so as to correspond to change in Article XIII. of the By-laws, to read as follows: "Annual election shall take place on the evening of the first Wednesday in December." Moved and seconded that the resolution be accepted; carried.

Moved and seconded that the Secretary be authorized to purchase a rubber stamp, to be used to stamp on the face of application blanks that the initiation fee of five dollars must accompany the application for membership; carried.

Moved and seconded that the Secretary be authorized to notify members that election of officers will take place on the evening of the first Wednesday in December; carried.

Moved and seconded that the meeting adjourn; carried.

ROBERT W. ELLIS, D.V.S.,
Secretary.

COLORADO STATE VETERINARY MEDICAL ASSOCIATION.

THE semi-annual meeting was called to order at 3 P.M., October 28th, at the office of the President, Dr. S. Bock, 1250 Glenarm Street, Denver, the President Dr. Sol. Bock in the chair. The following members answered to roll-call: Drs. S. Bock, F. W. Hunt, Charles G. Lamb, Charles Gresswell, W. A. Rushworth, E. Pouppirt, all of Denver; D. P. Frame, of Colorado Springs; and Dr. A. J. Savage, of Colorado Springs, visitor.

The principal object of calling a meeting at this time was to consider the matter of legislation in behalf of the profession in this State this winter. The old bill, which was introduced two years ago, was taken up and reconsidered, and after some few alterations in the phraseology, and one or two amendments were made to it, it was considered satisfactory. The principal amendment was that of Section 5, permitting non-graduates who have practised continually in the State for five or more years to register under the new law.

Moved by Dr. Gresswell that the regular meetings of this Association in the future be held on the Tuesday following the first Monday of January and July of each year; carried.

Dr. Frame proposed the name of Dr. A. J. Savage for membership, and the doctor was at once elected a member of this Association.

Drs. Gresswell and Rushworth were appointed to read a paper on "Glanders" at the meeting in January.

Dr. D. P. Frame was appointed to superintend the introduction of the proposed new bill in the Legislature this winter, and to represent the Association in the consideration of the same.

It is proposed to now hold regular semi-annual meetings of the Association, as we have been organized for over two years and have been making some effort to secure legislation in our behalf. We hope to succeed in our effort this winter.

The next meeting of the Association will be held in Denver, January 5, 1897.

D. P. FRAME, M.D.C.,
Secretary.

PENNSYLVANIA STATE BOARD OF VETERINARY MEDICAL EXAMINERS.

At the examination held at Harrisburg, October 20th and 21st, the following applicants successfully passed the Board: Drs. W. H. Yingst, Harrisburg, Pa., F. H. Schneider, Ashland, Pa., graduates of the New York College of Veterinary Surgeons, and Dr. J. H. Burt, of Union City, Pa. graduate of the Ontario Veterinary College.

The following members of the Board were present to conduct the examinations: President W. Horace Hoskins, Secretary S. J. J. Harger, and members J. W. Sallade and J. C. McNeil; absent, Dr. H. Walters.

The next examination of the Board will be conducted on December 20th and 21st, and will be specially for those who failed to pass the examination in June. The Board gives notice that during 1897 but two examinations will be held, the first in June and a second some six months later, in compliance with the requirements of the law, thus allowing those who failed to come up again for re-examination at the expiration of six months.

S. J. J. HARGER,
Secretary.

W. HORACE HOSKINS,
President.

PERSONAL.

The many friends of Dr. Cecil French, one of our regular contributors, will be pained to learn that his recent marriage has been followed by the serious illness of his wife with typhoid fever, supposed to have been contracted at some one of the hotels where they had stopped on their wedding tour.

Veterinarian A. W. Bitting, of the Purdue Experiment Station, Lafayette, Ind., has just issued a bulletin relative to the prevalence of swine-plague, advising methods to prevent the great losses resulting therefrom.

Dr. T. J. Turner, recently at Kansas City, Mo., was transferred to Indianapolis to take charge of the inspection work of the Bureau of Animal Industry.

Dr. W. L. Zuill, of Philadelphia, has recently become the proprietor of two of Philadelphia's most fashionable and prosperous livery- and boarding-stables.

Dr. Charles H. Higgins, a recent graduate of McGill University, has located at Port Antonio, Jamaica, West Indies.

Dr. F. H. Osgood has been unanimously reëlected Chairman and Mr. Leander F. Herrick, of Worcester, Secretary of the Massachusetts Cattle Commission.

Dr. J. M. Parker qualified as a member of the Cattle Commission of Massachusetts on October 21, 1896.

The JOURNAL seems not to have been reliably informed of the salary of Dr. M. E. Knowles at the Marcus Daly Farm in Montana. In place of \$4000, as stated, Dr. Knowles received \$5500 per annum. The present salary is said to be fixed at \$2000 per year.

Veterinarian G. H. Davison, of Milbrook, was recently appointed a member of the board of control of the New York State Experiment Station.

During November State Veterinarian Leonard Pearson, of Pennsylvania, addressed the Farmers' Institute, at Somerset, on the subject of "Hygiene as Applied to Farm Animals;" at Myersdale, on "Lameness of Horses;" and at Mt. Pleasant, on "Tuberculosis of Cattle."

Veterinarian Harry Emery, of Wilkinsburg, Pa., a graduate of the Ohio Veterinary College at Cincinnati, has opened a shoeing-forge in connection with his practice.

The reëlection of President John R. Hart and Secretary W. L. Rhoads as officers of the Keystone Veterinary Medical Association of Philadelphia and vicinity was a just recognition of their efficiency in conducting the affairs of the Association.

Professor John W. Adams recently addressed the Veterinary Medical Association of the Students of the Veterinary Department of the University of Pennsylvania on the subject of anti-toxins and the care and methods of their preparation. Dr. Adams is officially connected with one of the largest laboratories for the production of these preparations.

The November meeting of the Keystone Veterinary Medical Association was one of exceptional interest. The address of Dr. Benjamin Lee, Secretary of the State Board of Health, was fraught with salient points of interest as to needed legislation on sanitary affairs. A large number of the students of the Veterinary Department of the University of Pennsylvania were present.

Dr. M. E. Knowles, of Butte, Montana, still lingers at Terre Haute, Ind., owing to the illness of his children.

Veterinarian James Marshall, of Philadelphia, was a time-keeper at the trial of speed of the famous pacer John R. Gentry, at Belmont track.

Professor Eggling, of Germany, sent here to make an examination of the mare Bethel, now so famous, has returned to Germany to make reports to the courts so that the guilt of Robert Kneeb's may be finally decided.

Dr. Edward H. Flood, chief inspector of cattle for foreign shipment at the port of Philadelphia, under the Bureau of Animal Industry, has severed his connection therewith.

Dr. Alexander Glass, of Philadelphia, is said to be an applicant for the position of inspector under the Bureau of Animal Industry.

Governor Hastings, of Pennsylvania, has reappointed Dr. James W. Sallade, of Pottsville, a member of the State Board of Veterinary Medical Examiners. Dr. Sallade well merits this recognition, for he has been one of the most faithful members of the Board, and the Governor's action will meet the hearty approval of the profession and the other members of the Board.

Dr. William Dougherty, of Baltimore, has again been a sufferer from his old enemy, rheumatism, but we are glad to say he is getting better, and the wishes of his many friends are for a long period of freedom from this painful and distressing condition.

Dr. S. H. Ward, of Selkirk, Manitoba, has removed to St. Cloud, Minnesota, where he succeeds to the practice of Dr. W. H. Scruby. The latter has entered the Chicago Veterinary College preparatory for the degree of that institution.

Dr. Otto Noack, of Reading, addressed the Bucks County Agricultural Society meeting in November, referring especially to the importance and need of thorough measures in dealing with bovine tuberculosis.

Veterinarian E. C. Switzer, of Brimfield, Mass., is taking a course of instruction at the United States College of Veterinary Surgeons this winter.

Dr. R. D. Martin, of Bridgeport, Conn., has been elected one of the Board of Governors of the Bridgeport Driving-club.

Dr. N. P. Hinkley, of Buffalo, has again been forced to relinquish much of his professional work owing to impaired health.

President Hoskins, of the Pennsylvania State Board of Veterinary Medical Examiners, will address the Students' Association of the Veterinary Department of the University of Pennsylvania, in December, on the "Future Field of Work of the Veterinarian."

Dr. A. O. Cawley, of Milton, Pa., was one of the judges of horses at the Northumberland County Agricultural Show in October.

Corresponding Secretary Noack, of the Schuylkill Valley Veterinary Medical Association, was a welcome and interesting visitor to the November meeting of the Keystone Veterinary Medical Association.

Dr. O. G. Atherton, of Kansas City, Kansas, was recently appointed Assistant Inspector, and assigned for duty at Chicago.

MESSRS. P. BLAKISTON, SON & CO., 1012 Walnut Street, Philadelphia, have issued their annual *Physician's Visiting List* for 1897. The improvements in this very useful book, which added so much to its increased worth in 1896, have been still further added to for 1897, making it of the most complete character. This book is quite well adapted for the use of veterinarians, and its concise method of keeping one's accounts, whereby a ready statement is to be provided, renders it of additional value.

EVERY-DAY HAPPENINGS.

A school of farriery will be organized at Buffalo this winter, and among the lecturers already engaged we learn of the selection of Dr. Nelson P. Hinkley.

There was only one candidate for examination for meat inspector at the examination held in Kansas City, Kansas, on Monday, October 26th. It is thought that the large percentage

of failures to successfully cope with former examinations was the reason for such a small number of applicants, as the desire to secure these positions by Western veterinarians has been very strong, owing to the fact that practice in many of the Western States has been so unprofitable.

Dr. Newton S. Bryant, of Kansas City, a veterinary surgeon, who has been in New York for the past two months, was arrested at the horse-show Tuesday evening, November 10th, on a warrant charging him with practicing in New York State without being properly registered. The warrant was issued at the instance of Dr. Rush S. Huidekoper, member of the New York State Board of Veterinary Medical Examiners. The case has been postponed for a time.

At the Royal Veterinary College the inaugural address was delivered by Professor Macqueen, F.R.C.V.S. He said that twenty-one years ago the education of veterinary students was a simple affair. Candidates for admission were subjected to an elementary examination conducted voluntarily by the colleges. The professional studies occupied two sessions of seven months each. Now the preliminary examination is the same as that required from students of human medicine. The course of professional study has been extended to four years. To qualify for the diploma (M.R.C.V.S.) a student must attend 700 lectures, 200 demonstrations, and more than that number of clinical and tutorial classes. Further, he must attend the examination of 1800 or more animals and watch the progress of the patients. He must take a share of the practice at the Free Clinique, where 5000 animals—horses and dogs—are treated every year. Lastly, he must take an active interest in the examination as to soundness of ten or eleven hundred horses of all classes.—*London Times*, October 9, 1896.

GLEANINGS.

Iodide of potassium and salicylate of soda in half-drachm doses each, combined with one drachm of wine of colchicum, with sufficient water to make one ounce, given four times daily in conjunction with a cooling lotion and bandages, eradicated quickly and effectively an acute attack of rheumatism involving the front limbs from the knees down, at the Philadelphia Veterinary Sanitarium.

"Probasco," a noted running horse, after an injection of cocaine in an unsound limb, entered upon a mad run upon the race-track at Cincinnati, Ohio, and fractured the injected leg, necessitating his destruction. Hence the posting of Rule 187, absolutely prohibiting the giving of drugs to a horse just before a race in which it is to take a part, and its strict enforcement; and no excuse that they were given for medicinal purposes will be accepted. Horses needing such remedies must not be raced.

The whole world is awakening to the real importance of bovine tuberculosis, and every advanced community appreciates the necessity of active warfare against this source of tuberculosis, and its stamping out among our dairy-herds will be accomplished at no distant day by legislative enactments in every country and State. No matter what difference of opinion may exist as to whence it has come into our herds, it is our duty to stamp it out, and, if not done through a united profession and a consenting agricultural people, there will be to the latter the greatest losses ever experienced in the decreased consumption of their products and the search for substitutes, which has already begun, and when perfected will mean a permanent loss. The medical press is teeming with reports, criticisms, and editorials on the all-important need of a pure milk-supply, and, alive to the dangers of an unwholesome product, aside from the fact of the existence of tuberculosis, demands its production, sale, and care under greater sanitary safeguards; and it is well, it is right and proper; and an increased value in the open market will more than compensate the producers and advance the interests of all who are engaged in the production and sale of animal food-products.

It is interesting to note at home and abroad the deep concern of the profession in the transmission of hereditary predisposition to certain unsoundnesses and malformations in the equine species. In these days, when these blemished and defective animals are so great a drug in the market, it is well to agitate greater safeguards against their perpetuation, and the incident, direct and indirect, loss they cost the raiser, the dealer, and the veterinarian. It is quite time that State laws should be adopted having jurisdiction over stallions and bulls offered for service, that an innocent and confiding public may be protected from certain dangers and losses in this direction, the perpetuation of which only means greater hardships to all engaged in the live-stock industry.

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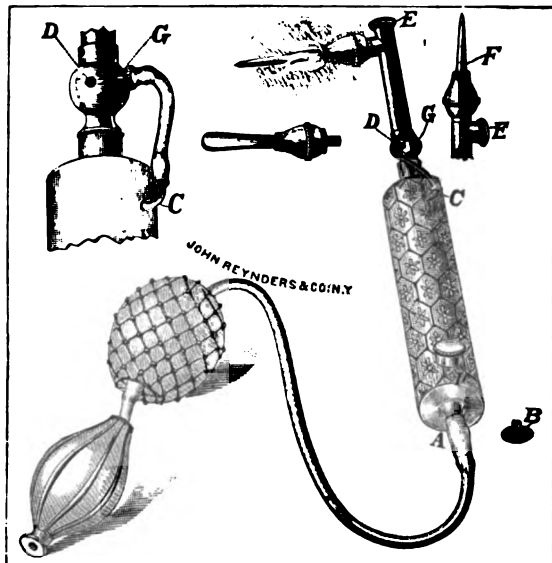
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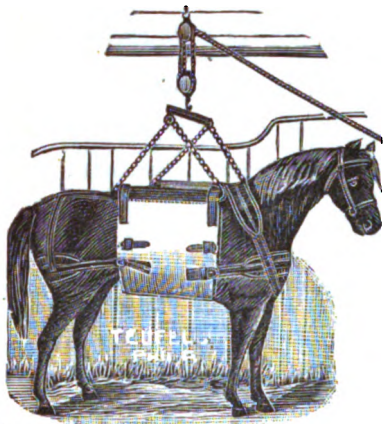
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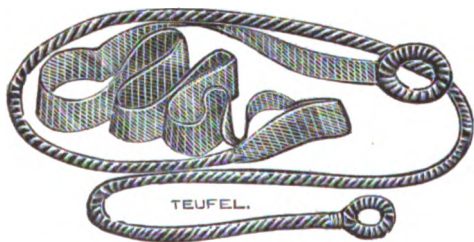
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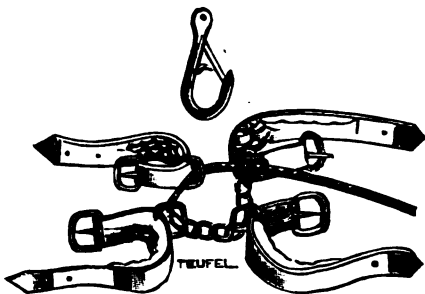
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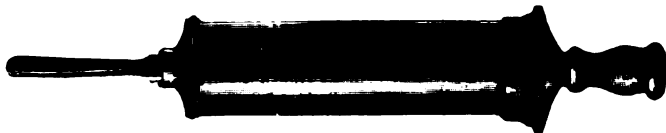
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